

BIBLIOGRAPHY OF PIEZOELECTRICITY
- 1953 -
Squier Signal Laboratory
Contract No. DA 36-039-sc-42587
Third Quarterly Progress Report
Wesleyan University - March 15, 1954

Karl S. Van Dyke
E. Charles Crume, Jr.

Department of the Army Project Number: 3-99-11-022

Signal Corps Project Number: 37-142B

Placed by U. S. Army Signal Corps Engineering Laboratories

Fort Monmouth, N. J.

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**Third Quarterly Progress Report
on Piezoelectric Crystal Studies and Measurements**

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PREFACE

This is the third of this series of Annual Bibliographies of Piezoelectricity. Again the coverage is much more extensive than that of the section on Piezoelectricity "Radio Progress...." in the year which is a feature of the April issues of the Proceedings of the Institute of Radio Engineers, and the bibliography is dated late enough in the new year to enable it to include most of the journals for the full calendar year preceding.

The same scheme of indexing by sub-fields throughout the pages is again used.

It is presumed that the bibliography will as in the past become promptly available on microcards through the Library of Congress so that its circulation may be as wide as is called for. Contract and report numbers should be used in requesting copies.

The authors acknowledge with appreciation the large part which Betty A. Crume has played in the preparation of this volume.

LIST OF JOURNALS CONSULTED.

Acta Crystallographica (Acta Cryst.)
American Journal of Physics (Amer. Jour. Phys.)
American Scientist (Amer. Scientist)
Annalen der Physik (Ann. der Phys.)
Bell Laboratories Record (Bell Lab. Rec.)
Bell System Technical Journal, The (Bell Sys. Tech. Jour.)
Bell Telephone Magazine (Bell Tel. Mag.)
Electrical Communication (Elec. Commun. (London)
Electronics
General Electric Review (G. E. Rev.)
Guide to Russian Scientific Periodical Literature (Brookhaven Nat'l Lab.)
Helvetica Physica Acta (Helv. Phys. Acta)
Indian Academy of Sciences, The Proceedings (Proc. Ind. Acad. Sci.)
Journal of the Acoustical Society of America, The (Jour. Acous. Soc. Amer.)
Journal of Applied Physics (Jour. Appl. Phys.)
Journal of the Franklin Institute (Jour. Franklin Inst.)
Journal of the Optical Society of America (Jour. Opt. Soc. Amer.)
Journal of Research of the National Bureau of Standards (Jour. Res. Nat. Bur. Stand.)
Journal of Scientific Instruments (Jour. Sci. Instr.)
Nature (London)
Philosophical Magazine, The (Phil. Mag.)

Physical Review, The (Phys. Rev.)

Physics Abstracts (Phys. Abstr.)

Physics Today

Physikalische Berichte

Proceedings of the Institute of Electrical Engineers, Part III, The
(Proc. IEE (London))

Proceedings of the Institute of Radio Engineers, The (Proc. IRE)

Proceedings of the Royal Society A, The (Proc. Roy. Soc.)

Proceedings of the Physical Society, The (A and B) (Proc. Phys.
Soc. (London))

RCA Review (RCA Rev.)

Review of Scientific Instruments, The (Rev. Sci. Instr.)

Reviews of Modern Physics (Rev. Mod. Phys.)

Science

Science Abstracts (Sci. Abstr.)

Technical Information Pilot (T.I.P.)

Wireless Engineer (Wireless Eng.)

Zeitschrift fur Physik (Zeit. fur Phys.)

An available series of reports to the U. S. Army Signal Corps on
the piezoelectric investigations of its contractors.

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
E. Ackerman, W. Holak (Penn State College) - "Ceramic probe microphones," Contr. AF - 33(038)786: Mar. 1953, WADC Tech. report 53-77 TAB U - 24, AD-12 966, Sept. 9, 1953.				x	
N. S. Ageeva, I. P. Zhukov, M. A. Isakovich, A. L. Sosedova and Y. M. Sukharevskii, "Electro-mechanical Q-meter; a set-up for measuring the elastic modulus and losses of materials by ultrasonic oscillations," (Zh. tekhn. Fiz., 22, 1029-42 (1952) in Russian) Phys. Abstr. 56, Ab. 1187, Feb. 1953.					x
R. R. Aggarwal, "Axially symmetric vibrations of a finite isotropic disk. III," Jour. Acous. Soc. Amer. 25, 533-35, May, 1953.			x		
G. A. Alers, "Internal friction of quartz," Jour. Appl. Phys. 24, 324-331, March, 1953.			x		
K. Altenburg and S. Kastner, "Demodulation von ultraschallwellen in Flüssigkeiten," Ann. der Phys. 11, 161-65, Nov. 1952.					x
R. Alvarez, (National Bureau of Standards). - "Precision temperature control in connection with quartz crystals," Contr. 21X2040 3-3237 P1820-07, S28-043 (31630) First quarterly progress report, Dec. 8, 1952 - March 8, 1953.			x		
S. Amelinckx, "Interferometric examination of quartz crystals," (Naturwet. T., 33, 169-74, (1951)). Phys. Abstr. 56, No. 1238, Feb. 1953.			x		
Andersen Labs., Inc., "Ultrasonic delay lines," Contr. AF 19(604)281): Interim engng. report no. 1, Mar. 1 - May 31, 1952. Interim engng. report no. 2, June 1 - Aug. 31, 1952. TAB U - 5, AD-2960, April 10, 1953.				x	x

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
Andersen Labs., Inc., "Ultrasonic delay lines," Contr. AF 19(604)-281: Interim engng. report no. 3, Sept. 1, 1952 - Nov. 30, 1952. TAB U - 19, AD-10,512, July 17, 1953. Final Engng. report no. 4, Dec. 1, 1952 - Feb. 28, 1953. TAB U - 16, AD-7,126, June 29, 1953.				x	x
Andersen Labs., Inc., " Ultrasonic delay lines," Electronics, <u>28</u> , 344, March 1953.					
W. M. A. Andersen, (Andersen Labs., Inc.) - "Ultrasonic delay lines," Contr. AF 19(604)-281: Interim engng. report no. 1, Mar. 1, 1952 - May 31, 1952. August 15, 1952. Interim engng. report no. 2, June 1, 1952 - Aug. 31, 1952. TAB U - 5, AD-2960, April 10, 1953. Interim engng. report no. 3, Sept. 1, 1952 - Nov. 30, 1952. TAB U - 19, AD-10,512, July 17, 1953. Final Engng. report no. 4, Dec. 1, 1952 - Feb. 28, 1953. TAB U - 16, AD-7,126, June 29, 1953.				x	x
J. R. Anderson, "Ferroelectric memory circuits for computers," Electronics <u>26</u> , 204-10, July, 1953.		x			
J. R. Anderson, "Ferroelectric and ferromagnetic memories," Bell Lab. Rec. <u>XXXI</u> , 280, July, 1953.		x			
J. R. Anderson, "Ferroelectric storage elements for digital computers and switching systems," Elec. Eng. <u>71</u> , 1195-1203, Oct. 1952.		x			
L. O. Anderson, "Ferroelectrics of barium titanate type - a bibliography," NAVORD Report 1965 April 22, 1952. TAB U - 2, AD-1036, March 20, 1953.	x	x			

Anon, (Atlantic Research Corp.) -
 "Transducers,"
 Electronics 26, 353-54, Oct. 1953.

Anon, (Bell Telephone Laboratories) -
 "Piezoelectric crystal units," June 1953
 No. X-75501.

Anon, (Bell Telephone Laboratories) -
 "Ferroelectric "Memory" crystals,"
 Jour. Franklin Inst. 256, 304, Sept. 1953.

Anon, (Brush Electronics Co.) -
 "Piezotronic technical data," 1953.

Anon, (Brush Electronics Co.) -
 "Piezotronics,"
 Electronics 26, 328, July, 1953.

Anon, (Consolidated Engineering Corp.) -
 "Pressure transducer,"
 Electronics 26, 274-76, Jan. 1953.

Anon, (Consolidated Engineering Corp.)
 "Pressure pickup,"
 Electronics 26, 324-26, Jan. 1953.

Anon, (Consolidated Engineering Corp.) -
 "Tiny pressure transducer,"
 Electronics 26, 353-54, April 1953.

Anon, (Endevco Corp.) - "Accelerometer,"
 Electronics 26, 292, Jan. 1953.

Anon, (Statham Laboratories, Inc.) - "Transducer,"
 Electronics 26, 392, Nov. 1953.

General
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	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
Antioch College - G. E. Owen and others. "Quartz research project," Contr. DA36-039-sc-15508: Second progress report - July 15, 1952 - Jan. 15, 1953. Quarterly report no. 3, Jan. 15, 1953 - Mar. 1953. Final report, Mar. 15, 1953 - June 14, 1953.	x				
D. L. Aronberg, "Ultrasonic delay lines," Electronics <u>26</u> , 210-16, July, 1953.				x	x
Armour Research Foundation - "Removal of moisture from crystal unit holders," Contr. AF 18(600)157: Final report, Nov. 13, 1952. TAB U - 21, AD-11,621, July 31, 1953.			x		
G. W. Arnold, Jr., "An electron diffraction investigation of the disturbed surfaces of quartz due to abrasion," NRL Report, 4271, Dec. 9, 1953. (Naval Research Lab.)	x		x		
G. W. Arnold, Jr., "Surface structure of quartz crystals," NRL Report, 4065, Oct. 31, 1952 (Naval Research Lab.)	x		x		
B. Aurivillius, "The structure of $\text{Bi}_2\text{NbO}_5\text{F}$ and isomorphous compounds," (Ark. Kemi, <u>5</u> , 29-47, (1952)). Phys. Abstr. <u>56</u> , No. 2082, March 1953.		x			
A. E. Austin, C. M. Schwartz, "The crystal structure of aluminum titanate," (Battelle Memorial Institute) - Acta Cryst. <u>6</u> , 812-13, Oct. 1953.		x			

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
G. E. Bacon, R. S. Pease, "A neutron diffraction study of potassium dihydrogen phosphate by Fourier synthesis," Proc. Roy. Soc. <u>220</u> , 397-421, Dec. 8, 1953.	x				
H. G. Baerwald, "Phenomenological theory of ferroelectric ceramics," (Program) Acous. Soc. Amer. 20, May 1953.	x				
H. G. Baerwald, D. A. Berlincourt, "Electromechanical response and dielectric loss of prepolarized barium titanate under maintained electric bias, Part I," Jour. Acous. Soc. Amer. <u>25</u> , 703-11, July, 1953.	x		x		
S. S. Ballard, K. A. McCarthy, "Thermal conductivity values for barium titanate," (Bulletin) Amer. Phys. Soc. <u>26</u> , 46, Jan. 22, 1953.	x				
C. Barclay, L. T. Sogn, "Reference data for orienting quartz plates by X-ray diffraction," (Circ. Nat. Bur. Stand., No. 543, 7, 1953.)	x		x		
R. Bechmann, "The linear piezoelectric equations of state," (Brit. J. Appl. Phys. <u>4</u> , 210-12, July, 1953) Phys. Abstr. <u>56</u> , No. 6763, Oct. 1953.	x				
R. Bechmann, "Thickness vibrations of piezoelectric crystal plates," Wireless Eng. <u>30</u> , A. 27, No. 357, Feb. 1953.			x		
R. Bechmann, "Piezoelectric resonators and oscillators using quartz and synthetic crystals," Wireless Eng. <u>30</u> , A. 104, No. 1376, May 1953.			x		
R. Bechmann, "The establishment of the orientation of crystal plates and the associated transformation of co-ordinates," (Arch. elekt. Ubertragung <u>7</u> , 305-07, June 1953.) Elec. Eng. Abstr. Section B, <u>56</u> , No. 5068, Dec. 1953.	x		x		

R. Bechmann, "Über dickenschwingungen
piezoelektrischer kristallplatten,"
Arch. Elek. (Uebertragung) 6, 361-68, 1952

R. Bechmann, "Zur festegung der orientierung von
kristallplatten und die zugehörige koordinatentrans-
formation,"
Arch. Elek. (Uebertragung) 7, 305-07, 1953.

R. Bechmann, "Piezoelectric resonators and
oscillators using quartz and synthetic crystals,"
Telefunken Ztg. 25, 229-45, Nov. 1952.

R. Bechmann, S. Ayers and C. E. Richards,
"Thickness modes of plates excited piezoelectrically,"
Post Office Engr. Dept., Research report no. 13471,
May 1952.
TAB U - 3, AD-2005, March 28, 1953.

R. Bechmann, G. T. Hollins, "A method of mounting
EDT crystal resonators by fusion,"
Post Office Engr. Dept., Research report no. 13646,
Aug. 1952.
TAB U - 21, AD-11,660, July 31, 1953.

J. F. W. Bell, "Fixed path ultrasonic interferometer
for absorption measurements on gases,"
Jour. Acous. Soc. Amer. 25, 96-100, Jan. 1953.

Bell Telephone Labs., Inc., "Quartz synthesis at high
pressures and temperatures," Contr. DA36-039-sc-5572:
Quarterly progress report no. 6
April 1 - June 30, 1952 (A. C. Walker).
Quarterly progress report no. 9
Jan. 1 - Mar. 31, 1953 (A. C. Walker).

Bell Telephone Laboratories, "Ferroelectric
'memory' crystals,"
Jour. Franklin Insti. 256, 304, Sept. 1953.

General
Ferroelectrics
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Bell Telephone Laboratories, "Piezoelectric crystal units, : No. X-75501, June 1953.

R. B. Belser, "Structure and resistivities of gold films deposited by evaporation and sputtering," Phys. Rev. 92, 1098, Nov. 15, 1953.

R. B. Belser, "The effects of high sputtering rates on the resistivities of sputtered gold films," (Georgia Institute of Technology) Phys. Rev. 92, 1083, Nov. 15, 1953.

R. B. Belser, W. H. Hicklin, "Effects of the alloying actions of dual-layer bi-metal electrodes on the frequencies of piezoelectric quartz resonators, : (Bulletin) Amer. Phys. Soc. 28, 33, Nov. 27, 1953.

I. N. Belyaev, N. S. Novosil'tsev, E. G. Fesenko and A. L. Khodakov, "Temperature changes of BaTiO₃ single crystals," (Dokl. Akad. Nauk SSSR 83, 675-6, 1952, In Russian) Phys. Abstr. 56, No. 5778, Aug. 1953.

I. N. Belyaev, N. S. Novosil'tsev, E. G. Fesenko and A. L. Khodakov, "The dielectric properties and optical anomalies of BaTiO₃ single crystals," (Zh. Eksp. Teor. Fiz. 23, 211-16, 1952) Proc. IRE 41, AB 1690, Nov. 1953.

L. Bergmann, BOOK REVIEW - "Schwingende Kristalle," by B. G. Leubner Verlagsgesellschaft, Leipzig, 1951, pp 51 + 51 figs. Jour. Acous. Soc. Amer. 25, 162, Jan. 1953.

S. Bernstein, "Negative resistance crystal oscillators," Electronics 26, 198-200, Feb. 1953.

E. F. Bertaut, "Electric field and energy in dipole lattices," Phys. Rev. 91, 415-16, July 15, 1953.

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J. F. W. Bishop, "A theoretical examination of the plastic deformation of crystals by glide," Phil. Mag. 44, 51-64, Jan. 1953.

N. P. Bogoroditskil, G. N. Verbitskaya, "Electric properties of ferroelectric ceramics near the curie point," (Zh. tekhn. Fiz. 22, 1920-9, (1952) In Russian) Phys. Abstr. 56, No. 6758, Oct. 1953.

F. Borgnis, "Zur physik des schallstrahlungsdrucks," Zeit. fur. Phys. 134, 363-76, Feb. 1953.

F. Borgnis, Calif. Inst. of Tech. - "Theory of Acoustic Radiation Pressure," Contr. Nonr-220(02): Revision of tech. report no. 1 dated July 25, 1951, March 10, 1953, submitted by Walter G. Cady.

C. J. F. Bottcher, BOOK REVIEW - "Theory of electric polarization," by Elsevier Press, 1952, pp 492. Electronics 26, 384-88, June 1953.

V. E. Bottom and others, Colorado A & M - "Research investigations on fundamental and overtone crystals," Contr. DA36-039-sc-66:

Quarterly progress report no. 7, Jan. 15 - April 15, 1952.

TAB U - 2, AD-623, March 20, 1953.

Quarterly progress report no. 8, April 15 - July 15, 1952.

TAB U - 2, AD-624, March 20, 1953.

Quarterly progress report no. 9, July 15 - Oct. 15, 1952.

TAB U - 4, AD-2620, April 6, 1953.

General	Ferroelectrics	Resonators	Transducers	Ultrasonics
x				
	x			
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x				
		x		

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
N. F. W. Bishop, "A theoretical examination of the plastic deformation of crystals by glide," Phil. Mag. <u>44</u> , 51-64, Jan. 1953.	x				
N. P. Bogoroditskii, G. N. Verbitskaya, "Electric properties of ferroelectric ceramics near the curie point," (Zh. tekhn. Fiz. <u>22</u> , 1920-9, (1952) In Russian) Phys. Abstr. <u>56</u> , No. 6758, Oct. 1953.		x			
F. Borgnis, "Zur physik des schallstrahlungsdrucks," Zeit. fur. Phys. <u>134</u> , 363-76, Feb. 1953.					x
F. Borgnis, Calif. Inst. of Tech. - "Theory of Acoustic Radiation Pressure," Contr. Nonr-220(02): Revision of tech. report no. 1 dated July 25, 1951, March 10, 1953, submitted by Walter G. Cady.					x
C. J. F. Bottcher, BOOK REVIEW - "Theory of electric polarization," by Elsevier Press, 1952, pp 492. Electronics <u>26</u> , 384-88, June 1953.	x				
V. E. Bottom and others, Colorado A & M - "Research investigations on fundamental and overtone crystals," Contr. DA36-039-sc-66: Quarterly progress report no. 7, Jan. 15 - April 15, 1952. TAB U - 2, AD-623, March 20, 1953. Quarterly progress report no. 8, April 15 - July 15, 1952. TAB U - 2, AD-624, March 20, 1953. Quarterly progress report no. 9, July 15 - Oct. 15, 1952. TAB U - 4, AD-2820, April 6, 1953.			x		

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
V. E. Bottom and others - Colorado A&M - "Research investigations on fundamental and overtone crystals," Contr. DA36-039-sc-66: Quarterly progress report no. 10 Oct. 15, 1952 - Jan. 15, 1953.			x		
R. P. Boyd, "Miller 402C Accelerometer Tech. memo. report no. WCNS 52-47, Aug. characteristics," Aircraft Lab., Wright Air Development Center, Dayton, O. 1952. TAB U - 23, AD-12,431, Aug. 31, 1953.			x		
G. Bradfield, "Ultrasonics in solids," Research (London) 6, 68-79, Feb. 1953.					x
J. N. Brennan, Penn State College - "Ultrasonics in metals," Contr. DA36-061-ord-106: First Annual report. TAB U - 11, AD-3,819, May 22, 1953.				x	
J. C. M. Srentano, T. L. Thourson, "An x-ray investigation on the effect of mechanical surface treat- ment on the lattice regularity of quartz and calcite," (Bulletin) Amer. Phys. Soc. 26, 22, Jan. 22, 1953.	x				
J. Brous, I. Fankuchen and E. Banks, "Rare earth titanates with a perovskite structure," Acta Cryst. 6, 67-70, Jan. 10, 1953.		x			
Brown University, Contr. N6-ori-215, Task 3 Technical report no. 5, July, 1953 (R. B. Lindsay).					x
Brush Development Co., "Increased quantity quartz synthesis," Contr. DA36-039-sc-15371: Quarterly report no. 6, Oct. 1 - Dec. 31, 1952. TAB U - 5, AD-2938, April 10, 1953. (W. Charbonnet) Quarterly report no. 7, Jan. 1 - Mar. 31, 1953 TAB U - 27, AD-14 497, Oct. 9, 1953 (W. Charbonnet)	x				

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
Brush Development Co., "Optimum methods for quartz synthesis," Contr. DA36-039-sc-15381:	x				
Quarterly report no. 4, June 1 - Aug. 31, 1952.					
TAB U - 7, AD-5,095, April 24, 1953. (D.R.Hale)					
Quarterly report no. 5, Sept. 1 - Nov. 30, 1952.					
TAB U - 10, AD-6,182, May 18, 1953. (D.R.Hale)					
Quarterly report no. 6, Dec. 1, 1952 - Feb. 28, 1953.					
(D. H. Hale)					
Quarterly report no. 7, Mar. 1 - May 31, 1953.					
(D.R.Hale)					
Quarterly report no. 8, June 1 - Aug. 31, 1953.					
(D. R. Hale)					
Quarterly report no. 9, Sept. 1 - Nov. 30, 1953.					
(D. R. Hale)					
Brush Electronics Co., "Piezotronic technical data," 1953.	x		x	x	
Brush Electronics Co., "Piezotronics,"	x		x	x	
Electronics 28, 328, July, 1953.					
E. Buehler, "Growing quartz crystals,"	x				
Bell Lab. Rec. XXXI, 241-46, July, 1953.					
E. J. W ersall and others - Penn State College -		x			
Contr. AF 33 (032)-12045: "Ferroelectric and high					
dielectric crystals - crystal growth from gels,"					
Technical Report no. 9, Nov. 15, 1952.					
TAB U-15, AD-9,045, June 19, 1953.					
G. Busch, W. Känzig and W. M. Meier,		x			
"Antiseignetelektrizität von $(\text{NH}_4)_2\text{H}_3\text{IO}_8$,					
Helv. Phys. Acta XXVI, 385, No. 3/4					

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
A. Carrelli, F. Porreca, "Ultrasonic grating remaining after stopping the supersonic waves I," IL Nuovo Cimento, <u>1X</u> , 90-91, No. 1, 1952.					X
A. Carrelli, F. Porreca, "Ultrasonic grating remaining after stopping the supersonic waves II," IL Nuovo Cimento <u>X</u> , 98-102, No. 1, 1953.					X
A. Carrelli, F. Porreca, "Ultrasonic grating remaining after stopping the supersonic waves III," IL Nuovo Cimento <u>X</u> , 883-92, No. 7, 1953.					X
A. E. Caswell, M. Takeo, (Univ. of Oregon) - "Investigation of scintillation counters for the detection of soft x-rays," Contr. DA36-039-sc-5599: Fifth Quarterly report, June 1, 1952 - Sept. 30, 1952. Sixth Quarterly report, Oct. 1, 1952 - Dec. 31, 1952.	X				
R. M. Challahan, J. F. Murray, (Naval Research Lab.) - "Preparation of reproducible barium titanate ceramics," NRL report No. 4176, June 2, 1953. TAB U - 25, AD-13 320, Sept. 18, 1953.		X			
J. Chapelle, "Recent applications of synthetic crystals," (Ann. Telecomm. <u>7</u> , 398-407, Oct. 1952.) Elec. Engr. Abstr. <u>58</u> , No. 1217, Mar. 1953.	X				

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
J. Chapelle, "Recent applications of synthetic crystals," Wireless Engr. <u>30</u> , No. 1046, April, 1953.	x				
W. H. Charbonnet, (Brush Development Co.) - "Increased quantity quartz synthesis," Contr. DA36-039-sc-15371: Quarterly progress report no. 6, Oct. 1 - Dec. 31, 1952. TAB U - 5, AD-2923, April 10, 1953. Quarterly progress report no. 7, Jan. 1 - Mar. 31, 1953. TAB U - 27, AD-14 497, Oct. 9, 1953.	x				
C. E. Chase, "Ultrasonic measurements in liquid helium," (Bulletin) Amer. Phys. Soc. <u>28</u> 65, April 30, 1953.					x
C. E. Chase, "Ultrasonic measurements in liquid helium," Proc. Royal Soc. <u>220</u> , 116-132, Oct. 22, 1953.					x
D. Cohen, L. Silver, (New York University) - "Investigation studies and evaluation of performance of crystal unit characteristics -Task A-Investigation and studies of microwave frequency division," Contr. DA36-039-sc-5493: Quarterly report no. 5, Sept. 15 - Dec. 15, 1952. TAB U - 3, AD 1 300, March 28, 1953. Quarterly report no. 6, Dec. 15, - Mar. 15, 1953. Quarterly report no. 7, Mar. 15 - June 15, 1953. Quarterly report no. 8, (final report), June 15 - Sept. 15, 1953.		x			

Colorado A & M -

"Research investigations on fundamental and overtone crystals," Contr. DA36-039-sc-68:

Quarterly progress report no. 7

Jan. 15 - April 15, 1952.

(V. E. Bottom and others)

TAB U - 2, AD-623, Mar. 20, 1953.

Quarterly progress report no. 8

April 15 - July 15, 1952.

(V. E. Bottom and others)

TAB U - 2, AD-624, Mar. 20, 1953.

Quarterly progress report no. 9

July 15 - Oct. 15, 1952.

(V. E. Bottom, J. Deininger)

TAB U - 4, AD-2620, April 6, 1953.

Quarterly progress report no. 10

Oct. 15, 1952 - Jan. 15, 1953.

(V. E. Bottom, and others)

TAB U - 13, AD-6,524, June 5, 1953.

Columbia University -

"Investigations of the mathematical theory of vibration of anisotropic bodies," Contr. DA36-039-sc-15481:

Quarterly report no. 3 - Oct. 1 - Dec. 31, 1952.

TAB U - 25, AD-13,193, Sept. 18, 1953.

(R. Mindlin)

"Forced motions of elastic rods," Contr. Nonr-266(09):

Tech. report no. 4, Feb. 1953. (G. Herrmann)

"Effects of an oscillating torsional couple on the contact surfaces of elastic spheres," Contr. Nonr-266(09):

Tech. report no. 5, Feb. 1953. (H. Deresiewicz)

"Reflection of flexural waves at the edge of a plate,"

Contr. Nonr-266(09):

Tech. report no. 6, Feb. 1953. (T. R. Kane)

General

Ferroelectrics

Resonators

Transducers

Ultrasonics

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x

x

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
Consolidated Engineering Corp., "Pressure transducer," Electronics <u>26</u> , 274-76, Jan. 1953.				x	
Consolidated Engineering Corp., "Pressure pickup," Electronics <u>26</u> , 324-26, Jan. 1953.				x	
Consolidated Engineering Corp., "Tiny pressure transducer," Electronics <u>26</u> , 353-54, April, 1953.				x	
R. K. Cook, R. G. Brechenridge, "Anelasticity of quartz," Phys. Rev. <u>92</u> , 1419-23, Dec. 15, 1953.	x		x		
W. R. Cook, Jr., H. Jaffe, "Ferroelectricity in oxides of fluorite structure," (Bulletin) Amer. Phys. Soc. <u>28</u> , 46, Jan. 22, 1953.		x			
J. F. Corwin and others, "The formation and growth of quartz in sodium fluoride solutions under isothermal condittions," Jour. Amer. Chem. Soc. <u>75</u> , 1581-83, 1953.	x				
R. M. Cotts, W. D. Knight, "Nuclear resonance of Nb ⁹³ in KNbO ₃ ," (Programme of the Stanford meeting Dec. 28, 29 and 30, 1953.) (Bulletin) Amer. Phys. Soc. <u>28</u> , 6, Dec. 28, 1953.		x			
L. W. Coughanour, V. A. DeProsse, "Phase equilibria in the system MgO-TiO ₂ ," Jour. Res. Nat'l. Bur. Standards <u>51</u> , 85-88, Aug. 1953.		x			
V. Crawford, D. W. Fraser, (Georgia Insti. Technology) - "Precision frequency control techniques (500 Mc and higher)," Contr. DA36-039-sc-42590: Progress report no. 1, Feb. 1, 1953 - May 1, 1953.	x		x		

	General	Ferroelectrics	Resonators	Transducers	Ultrasounds
L. E. Cross, "Ferroelectricity in the perovskite type structures," (A paper given at the Spring Provincial meeting in the Dept. of Physics, Univ. of Leeds.) Proc. Phys. Soc. <u>66</u> , Sec. B, xvii; Dec. 1, 1953.		x			
L. E. Cross, "The dielectric properties of barium titanate single crystals in the region of their upper transition temperature," Phil. Mag. <u>44</u> , 1161, Oct. 1953.		x			
S. Dairiki, T. E. Lawrence and R. A. Mapleton, "Equivalent network representations for solid and mercury delay lines," Jour. Acous. Soc. Amer. <u>25</u> , 841-53, Sept. 1953.				x	
W. C. Dash, "Additive coloration of single crystals of BaO," (Bulletin) Amer. Phys. Soc. <u>28</u> , 23, Jan. 22, 1953.	x	x			
L. Davis, Jr., L. G. Rubin, "Some dielectric properties of barium-strontium titanate ceramics at 3000 megacycles," Jour. Appl. Phys. <u>24</u> , 1194, Sept. 1953.		x			
A. deBretteville, Jr., E. D. Harris, "Threshold Field vs temperature slope for paraelectric-ferroelectric change in BaTiO ₃ ," (Bulletin) Amer. Phys. Soc. <u>28</u> , 30, Nov. 27, 1953.		x			
A. deBretteville, Jr., "Threshold field and free energy for the antiferroelectric-ferroelectric phase transition in lead zirconate," (Bulletin) Amer. Phys. Soc. <u>28</u> , 15, Mar. 26, 1953.		x			

	General	Ferroelectrics	Acoustic	Transducers	Ultrasonics
J. J. DeBuske, "The N1 carrier oscillators," Bell Lab. Rec. <u>XVII</u> , 48-51, Feb. 1953.			x		
H. Deresiewicz, (Columbia University) - "Effects of an oscillating torsional couple on the contact surfaces of elastic spheres," Contr. Nonr-266(09): Tech. report no. 5, Feb. 1953.			x		
A. F. Devonshire, "Theory of ferroelectrics," (A paper given at the Spring Provincial meeting in the Dept. of Physics, Univ. of Leeds.) Proc. Phys. Soc. <u>66B</u> , xvii; Dec. 1, 1953.		x			
A. Dognon - BOOK REVIEW - "Les Ultrasons et Leurs Applications," (Presses Universitaires, Paris, 1953, pp 181). J. phys. et radium <u>14</u> , 558, Oct. 1953.					x
C. E. Duke, (Penn State College) - "Analysis of damping in elastic solids," Contr. DA36-061-ord-237: Tech. report no. 1, Sept. 1, 1952 - Feb. 28, 1953. TAB U - 6, AD-4, 483, April 20, 1953.	x		x		
R. H. Dungan and others, "Lattice Constants and dielectric properties of barium-titanate-stannate-strontium- titanate bodies," Jour. Amer. Ceram. Soc. <u>35</u> , 318-321, Dec. 1952.		x			

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
L. Egerton, "Some factors affecting the dielectric and piezoelectric properties of barium titanate ceramics," (Talk given at the Electrical Insulation Conference, Pocono Manor, Pa.) Bell Lab. Rec. <u>XXXI</u> , 511, Dec. 1953.		x			
I. Egerton, S. E. Koonce, "The structure of barium titanate ceramics, as observed with the electron microscope," (Talk given at the Basic Science Section, American Ceramic Society, Schenectady, N. Y.) Bell Lab. Rec. <u>XXXI</u> , 511, Dec. 1953.		x			
Endevco Corp., "Accelerometer," Electronics <u>26</u> , 292, Jan. 1953.				x	
C. Ener, "On the study of the wave field of a vibrating quartz crystal," (Rev. Fac. Sci. Univ. Istanbul A, <u>18</u> , 101-09, Jan. 1953.) Phys. Abstr. <u>56</u> , No. 4668, July 1953.			x	x	x
J. Euler, "Electrets," Z. Ver. dtsh. Ing. <u>94</u> , 481-83, June 1, 1952.	x				
H. T. Evans, Jr. (Mass. Institute of Technology) - "An x-ray diffraction study of barium titanate," Contrs. N5ori-07801 and N5ori-07858: Tech. report no. 58 January 1953.		x			
M. D. Fagen, "Performance of ultrasonic vitreous silica delay lines," Proc. NEC (Chicago) <u>7</u> , 380-89, 1951.				x	

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
R. D. Fay, "Effect of losses on transmittivity of plates," (Program) Acous. Soc. Amer. 20, May 1953.					x
V. H. Fedorovich, "Acoustical method of measurement of vibration," (Zh. Tekhn. Fiz. 22, 238-44, 1952, in Russian), Jour. Acous. Soc. Amer. 24, 788, Nov. 1952.					x
E. G. Fesenko, "The domain structure of lead titanate," Dopl. Akad. Nauk. SSSR 88, 785-86, 1953 in Russian.		x			
P. G. T. Fogg, P. A. Hanks and J. D. Lambert, "Ultrasonic dispersion in halo-methane vapours," Proc. Roy. Soc. 219, 490-99, Oct. 7, 1953.					x
P. W. Forsberg, Jr. (Mass. Institute of Technology) - "Effect of a two-dimensional pressure on the curie point of barium titanate," Tech. Report no. 74, Oct. 1953.		x			
D. R. Frankl, T. A. Read, "Internal friction of rocksalt single crystals," (Bulletin) Amer. Phys. Soc. 28, 22, Jan. 22, 1953.	x		x		
B. C. Frazer and Ray Pepinsky, "A phase transition in CaH_2AsO_4 ," (Bulletin) Amer. Phys. Soc. 28, 14-15, Mar. 26, 1953.		x			
B. C. Frazer, "A phase transition in $\text{ND}_4\text{D}_2\text{AsO}_4$," (Bulletin) Amer. Phys. Soc. 28, 48, Mar. 26, 1953.		x			
B. C. Frazer, R. Pepinsky, "X-ray analysis of the ferroelectric transition in KH_2PO_4 ," Acta Cryst. 6, 273-85, Mar. 10, 1953.		x			

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
<p>A. F. Frederickson, J. E. Cox, Jr. and P. Y. Feng, (Washington University) - "Research related to the formation and growth of pegmatite minerals," Contr. DA38-039-sc-5513: Quarterly progress report no. 6, July 16, 1952 - Oct. 15, 1952. Quarterly progress report no. 7, Oct. 16, 1952 - Jan. 15, 1953. (A. F. Frederickson, J. E. Cox, Jr.) Final Report, Mar. 15, 1951 - Mar. 14, 1953. (Frederickson, J. E. Cox, Jr.) First Report, April 16, 1953 - July 15, 1953. (A. F. Frederickson, J. E. Cox, Jr.)</p>	x				
<p>C. Fröndel, (Harvard University) - "Investigation into effects of radiation on the physical properties of quartz," Contr. DA36-039-sc-15350: Quarterly progress report no. 4, April 30 - July 30, 1952. Quarterly progress report no. 5, July 30 - Oct. 30, 1952. TAB U - 11, AD-7, 256, May 22, 1953. Quarterly progress report no. 6, Oct. 30, 1952 - Jan. 30, 1953. TAB U - 24, AD-12 917, Sept. 9, 1953. Quarterly progress report no. 7, Jan. 30 - April 30, 1953.</p>	x				
<p>A. D. Frost, C. R. Mingos and L. A. Howard, "An electric wave filter combining piezoelectric divided electrode units," (Bulletin) Amer. Phys. Soc. <u>28</u>, 47, April 30, 1953.</p>			x		
<p>W. J. Fry, R. B. Fry, "Temperature changes produced in tissue during ultrasonic irradiation," Jour. Acous. Soc. Amer. <u>25</u>, 6-11, Jan. 1953.</p>					x

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
W. J. Fry, "Action of ultrasound on nerve tissue," Jour. Acous. Soc. Amer. <u>25</u> , 1-5, Jan. 1953.					x
H. Futaba, "On some dielectric properties of a few solids having 'hydrogen bond' in their crystal structures," Jour. Fac. Sci. <u>4</u> , 217-27, Nov. 1953. (Hokkaido Univ.).		x			
W. J. Galloway, "Simple calibration technique for low-sensitivity transducers," Acous. Soc. Amer. <u>25</u> , 1127-29, Nov. 1953.				x	
J. W. Gells, "Test set for the M1 carrier system," Bell Lab. Rec. <u>XXXI</u> , 10-14, Jan. 1953.			x		
Georgia Institute of Technology - (R. J. Rauderbaugh and others) - "Investigation of frequency control above 150 megacycles," Contr. DA36-039-sc-5410: Final report Jan. 31, 1953 TAB U - 16, AD-9,802, June 29, 1953			x		
"Aging study of metal plating on quartz crystals," Contr. DA36-039-sc-147: Quarterly report no. 6, Oct. 1, 1951 - Jan. 1, 1952. TAB U - 7, AD-4,475, April 24, 1953.			x		
Quarterly report no. 7, Jan. 1 - April 1, 1952. TAB U - 9, AD-6,091, May 8, 1953.					
"Aging study of metal plating on quartz crystals," Contr. DA36-039-sc-42453: (Cont. Contr. sc-147) - Quarterly report no. 2, Aug. 1 - Nov. 1, 1952. Quarterly report no. 3, Nov. 1, 1952 - Feb. 1, 1953. TAB U - 25, AD-13 814, Sept. 18, 1953.			x		
Quarterly report no. 4, Feb. 1 - May 1, 1953. Quarterly report no. 5, May 1 - Aug. 1, 1953.					

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
Georgia Institute of Technology - Vernon Crawford and D. W. Fraser, "Precision frequency control techniques (500 Mc and higher), " Contr. DA36-039-sc-42590: Progress report No. 1 Feb. 1 - May 1, 1953.	x		x		
E. A. Gerber, "A review of methods for measuring the constants of piezoelectric vibrators," Proc. IRE <u>41</u> , 1103-1112, Sept. 1953.			x		
G. M. Giannini & Co., Inc., "Oil-filled accelerometer unit," Electronics <u>26</u> , 403-05, Mar. 1953.				x	
J. H. Gibbs, "Ferroelectricity in rochelle salt," (Bulletin) Amer. Phys. Soc. <u>28</u> , 23, April 30, 1953.		x			
A. E. Glauberman, A. F. Lubchenko, "Theory of the dielectric properties of barium titanate in stationary fields," (Zh. Eksp. Teor. Fiz., <u>23</u> , 183-98, 1952.) Phys. Abstr. <u>56</u> , No. 5456, Aug. 1953.		x			
A. E. Glauberman K. Gossiau, "Precision frequency measurements," Frequenz <u>6</u> , 249-55, Sept. 1952.			x		
M. Greenspan, M. C. Thompson, Jr., "Eleven megacycle interferometer for low pressure gases," Jour. Acous. Soc. Amer. <u>25</u> , 92-6, Jan. 1953.					x
H. J. Grenville-Wells, (Mass. Inst. Tech.) - "A graphical method of evaluating certain crystallographic structure factors," Contrs. N5-ori-07801, N5-ori-07858: Tech. report no. 65, Feb. 1953 TAB U - 9, AD-6,196, May 9, 1953.	x				
E. P. Gross, (Mass. Inst. Tech.) - "Behavior of slow electrons in polar crystals," Contrs. N5-ori-07801, N5-ori-07858: Tech. report no. 55, Dec. 1952.		x			

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
E. Grossetti, "Sul modo di vibrazione della superficie di una lamina di quarzo piezoelectrico," IL Nuovo Cimento <u>X</u> , 151-6, Feb. 1953.			X		
J. W. Gruner, L. Gardiner, (Univ. of Minnesota) - "Twinning studies of quartz type structures," Contr. DA36-038-sc-5419: Quarterly report no. 4, Dec. 16, 1951 - Mar. 15, 1952. Quarterly report no. 5, Mar. 15 - June 15, 1952. Quarterly report no. 6, Sept. 16 - Dec. 15, 1952. Quarterly report no. 7, Dec. 16, 1952 - Mar. 15, 1953. Final report covering period of Dec. 1, 1950 - June 30, 1953.	X		X		
C. E. Goodell, "Ultrasonic recorder gages torpedo depth," Electronics <u>26</u> , 118-21, Feb. 1953.					X
F. T. Gucker, Jr., R. M. Haag, "Compressibility of solutions II. An ultrasonic study of aqueous solutions of some simple amino acids and their uncharged isomers at 25° C," Jour. Acous. Soc. Amer. <u>25</u> , 470-79, May 1953.					X
A. Guinier, - BOOK REVIEW - "X-ray crystallographic technology," edited by T. L. Tippell and Kathleen Lonsdale, London: Hilger and Watts, 1952. (U.S. Distributor - Jarrell Ash, Boston), pp 330 - illus. + plates.	X				
S. B. Gurevich, V. G. Panchenko, "Ferroelectric materials," (Priroda No. 3, 54-61, Mar. 1952), Wireless Engr. <u>30</u> , No. 1373, May 1953.		X			

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
Harshaw Chemical Co. - H. Kremers and others - "Barium titanate and related crystal growth," Contr. DA36-039-sc-15493: Interim report no. 2 Oct. 1 - Dec. 31, 1952. TAB U - 10, AD-6,495, May 18, 1953. Interim report no. 3 Jan. 1 - 31 Mar. 1953. TAB U - 21, AD-11,339, July 31, 1953.	x	x			
Harvard University - C. Frondel - "Investigation into effects of radiation on the physical properties of quartz," Contr. 36-039-sc-15350: Quarterly progress report no. 4 April 30 - July 30, 1952 Quarterly progress report no. 5. July 30 - Oct. 30, 1952 TAB U - 11, AD-7,256, May 22, 1953. Quarterly progress report no. 6 Oct. 30, 1952 - Jan 30, 1953. TAB U - 24, AD-12 917, Sept. 9, 1953. Quarterly progress report no. 7 Jan 30 - April 30, 1953.	x		x		
O. S. Heavens, "Surface layer on crystalline quartz," Acta Cryst. 6, 571-72, June 10, 1953.	x		x		
F. M. Henry and K. Lonsdale (Edited by -) BOOK REVIEW - "International tables for x-ray crystallography," (Published for the International Union of Crystallography - Birmingham: Kynoch Press 1952. pp xli + 558, 237 figs.	x				

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
J. F. Herrick, "Temperatures produced in tissues by ultrasound " Jour. Acous. Soc. Amer. <u>25</u> , 12-16, Jan. 1953.					X
G. Herrmann - (Columbia University) - "Forced motions of elastic rods," Contr. Nonr-266(09): Tech. report no. 4, Feb. 1953.			X		
G. Hess (Lavole Labs.) - "Development of frequency meter," Contr. DA36-039-sc-5526: Quarterly progress report no. 5 Aug. - Nov. 1952. Quarterly progress report no. 6 Dec. 1952 - Feb. 1953. Quarterly progress report no. 7 Mar. - May 1953.			X		
W. Heywang, "The character of the higher transition in BaTiO_3 ," (Entwicklungsber. Siemens & Halske, <u>15</u> , 87-90, May 1952. In German) Phys. Abstr. <u>56</u> , No. 5455, Aug. 1953.		X			
Hilger & Watts Ltd., "Quartz crystal x-ray goniometer," Jour. Scien. Instru. <u>30</u> , 143, April 1953.	X				
R. W. Hill, P. L. Smith, "The anomalous specific heat of ferrous ammonium sulphate," Proc. Phys. Soc. <u>66A</u> , 228-32, Mar. 1, 1953.			X		
K. Hirakawa, T. Okada, "On the dielectric properties of tungsten trioxide," (Mem. Fac. Sci. Kyūsyū Univ. B, <u>1</u> , No. 1, 1-8, 1951) Phys. Abstr. <u>56</u> , No. 207, Jan. 1953.			X		

	General	Ferroelectrics	Resonators	Transducers	Optics
P. M. Honnell, "Anomalous transient response of a crystal pick-up," Jour. Acous. Soc. Amer. <u>25</u> , 570-74, May 1953.				x	
T. F. Hueter, "A temperature invariant impedance point in the frequency response of circular barium titanate transducers," Jour. Acous. Soc. Amer. <u>25</u> , 152, Jan. 1953.			x	x	
J. K. Hulm, "Low-temperature dielectric properties of cadmium and lead niobates," (Letter to the editor), Phys. Rev. <u>92</u> , 504-05, Oct. 15, 1953.		x			
Institute of Radio Engineers, "Radio progress during 1952," Proc. IRE <u>41</u> , 452-507, April 1953.	x				
Y. Itaka, "A technique for testing the piezoelectric properties of crystals," Acta Cryst. <u>6</u> , 663-64, July 10, 1953.	x		x		
H. Iwayanagi, "Measurement of permittivity of mixed barium and strontium titanate in 3000 Mc/s region," Jour. Phys. Soc. Japan <u>8</u> , 525-30, July - Aug. 1953.		x			
K. S. Iyengar, "Temperature dependence of ultrasonic velocity in liquid mixtures," (Proc. Ind. Acad. Sci. <u>35</u> , 190-93, April 1952,) Jour. Acous. Soc. Amer. <u>24</u> , 797, Nov. 1952.					x

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
C. Jaccard, W. Känzig and M. Peter, "Das verhalten von kollidalen seignetteelektrika I, Kaliumphosphat KH_2PO_4 ," Heiv. Phys. Acta <u>XXVI</u> , No. 5, pp 521, (1953),		x			
R. W. James, BOOK REVIEW - "X-ray crystallography," 5th edition, (London: Methuen and Co. 1952. pp X + 101. Proc. Phys. Soc. <u>66A</u> , 499, May 1, 1953.	x				
E. T. Jaynes, BOOK REVIEW - "Ferroelectricity," (Princeton University Press, pp 144) Physics Today, <u>6</u> , 31, Mar. 1953.	x	x			
F. Jona, R. Pepinsky, (Penn State College) - "Ferroelectric and high dielectric crystals - crystal preparation for dielectric measurements," Contr. AF -33(038)-12645 Tech. report no. 4, Oct. 1, 1952. TAB U - 15, AD-9,048, June 19, 1953.		x			
F. Jona, R. Pepinsky, "Study of the transition in $LiNH_4C_4H_4O_6 \cdot H_2O$," (Bulletin) Amer. Phys. Soc. <u>28</u> , 9, June 18, 1953), Phys. Rev. <u>92</u> , 845, Nov. 1, 1953.		x			
F. Jona, R. Pepinsky, "Dielectric properties of some double tartrates," (Letter to the editor), Phys. Rev. <u>92</u> , 1577, Dec. 15, 1953.		x			
E. Jones, "Cemented piezoelectric accelerometers," Rev. Sci. Instr. <u>24</u> , 1151, Dec. 1953.					x

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
K. Kambe, I. Nakada and H. Takahasi, "Hysteresis Loops of ceramic barium titanate at high frequencies I," Jour. Phys. Soc. Japan <u>8</u> , 9-14, Jan.-Feb. 1953.		x			
K. Kambe, "Hysteresis loops of ceramic barium titanate at higher frequencies II," Jour. Phys. Soc. Japan <u>8</u> , 15-20, Jan.-Feb. 1953.		x			
T. R. Kane (Columbia University) - "Reflection of flexural waves at the edge of a plate," Contr. Nonr-266(09): Tech. report no. 6, Feb. 1953.			x		
W. Kanzig, R. Sommerhalder, "Das verhalten von kolloidalen selnneteelektrika II, Theoretische Betrachtungen," Helv. Phys. Acta <u>26</u> , 603-10, 1953.		x			
A. Karolus, "A new quartz oscillator for the frequency range 1-20 kc/s," (Elektrotech. Z., <u>74</u> , 136-140, Mar. 1953.) Wireless Engr. <u>30</u> , No. 2267, Aug. 1953.			x		
J. Karpovich, "The study of the molecular structure of organic liquids by means of ultrasonics," (Program) - Accus. Soc. Amer. 11, May 1953.					x
H. F. Kay, "Report on researches with ferroelectric materials," (Rep. Brit. Elect. Res. Assoc. Ref. L/T257, 18, (1951)). Phys. Abstr. <u>56</u> , No. 3286, May, 1953.		x			
S. Kelly, "Piezo-electric crystal pick-ups," (J. Brit. Instn. Radio. Engrs. <u>13</u> , 161-72, Mar. 1953.) Elec. Engr. Abstr. <u>56</u> , No. 3006, July 1953.				x	

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
W. F. Kennedy, J. E. King, (Davies Labs., Inc.) - "Crystal oscillators," Contr. Nonr-843(00): Summary Report, Nov. 1, 1951 - Feb. 28, 1953. TAB U - 16, AD-9, 610, June 29, 1953.			x		
E. Kettel, "The stability of quartz oscillators," Wireless Engr. 30, No. 1274, May 1953. (Telefunken Ztg. 35, 246-258, Nov. 1953.)			x		
E. Kettel, "Quartz-crystal circuit with variable coupling as oscillator and discriminator," (Telefunken Ztg. 25, 265-69, Nov. 1952.) Wireless Engr. 30, No. 1277, May 1953.			x		
V. P. Konstantinova, A. V. Shubnikov, "Vibrations of 'textural' piezoelectric rochelle salt laminae," (Zh. tekhn. fiz. 21, 982-9 (1951) In Russian) Phys. Abstr. 55, No. 1469, Mar. 1953.				x	
M. Kornetzki, "The nonlinearity of titanate capacitors," Proc. IRE 41, 1686 (Abstr. No. 2916) Nov. 1953.		x			
M. S. Kosman, "Some remarks on the paper 'Dynamics of barium titanate polarization process,' (Ah. eksper. teor. Fiz. 23, 439, (1952) In Russian) Phys. Abstr. 56, No. 3289, May 1953.		x			
H. C. Kremers and others (Harshaw Chemical Co.) - "Barium titanate and related crystal growth," Contr. DA36-039-sc-15493 (cont. of Contr. DA36-039-sc-74) Interim report no. 1, July 1 - Sept. 30, 1952. Interim report no. 2, Oct. 1 - Dec. 31, 1952 TAB U - 10, AD-6, 495, May 18, 1953. Interim report no. 3, Jan. 1 - Mar. 31, 1953. TAB U - 21, AD-11, 339, July 31, 1953.	x	x			

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
M. Kumai, I. Domuro, "On the time lag of the piezoelectric effect of rochelle salt," Jour. Fac. Sci. <u>4</u> , 247-52, Nov. 1953.		x			
A. L. Lane, "Design techniques for a high frequency transducer with a wide-beam searchlight pattern," Jour. Acous. Soc. Amer. <u>25</u> , 697-702, July 1953.				x	
A. L. Lane, "Barium titanate admittance-temperature characteristics," Jour. Acous. Soc. Amer. <u>25</u> , 873-78, Sept. 1953.		x			
T. Lange, "Methods for investigating oscillation cavitation in liquids by means of ultrasonics," Akust. Beihefte, No. 2, 75-82, 1952.					x
Lavole Labs. - G. Hess, "Development of frequency meter," Contr. DA36-039-sc-5526: Fifth quarterly report, Aug. 1952 - Nov. 1952. Sixth quarterly report, Dec. 1952 - Feb. 1953. Seventh quarterly report, Mar. 1953 - May 1953.			x		
H. B. Law, J. S. McClements (Post Office Engr. Dept.) - "Design and construction of an automatic response recorder, for use in the production of quartz oscillator plates," (Nov. 21, 1952.) TAB U - 18, AD-10, 228, July 13, 1953.			x		

J. LeBot, S. LeMontagner and Y. Allain,
 "Study at 9500 Mc/s of the phase transitions of
 some alkaline phosphates and arsenates,"
 (C. R. Acad. Sci. (Paris) 236, 1409-12,
 April 7, 1953, In French),
 Phys. Abstr. 56, No. 6755, Oct. 1953.

Y. LeCorre, "Détermination des sept constantes
 élastiques dynamiques du phosphate monoammonique,"
 Comp. Rend. 236, 1903-05, May 11, 1953.

J. F. Lehmann, "The biophysical mode of action of
 biologic and therapeutic ultrasonic reactions,"
 Jour. Acous. Soc. Amer. 25, 17-25, Jan. 1953.

S. LeMontagner, J. LeBot and Y. Allain, "The
 complex dielectric constant at 9500 Mc/s of some
 phosphates as a function of temperature,"
 (C. R. Acad. Sci. (Paris) 235, 1199-1201,
 Nov. 17, 1952.)
 Phys. Abstr. 56, No. 331, Feb. 1953.

R. B. Lindsay, (Brown University) -
 Contr. N6-ori-215, Task 3, Tech. report no. 5.
 July 1953.

I. Lindqvist, "The structure of the hexaniobate
 ion in $7 \text{Na}_2\text{O} \cdot 6 \text{Nb}_2\text{O}_5 \cdot 32 \text{H}_2\text{O}$," (Ark. Kemi. 5,
 Paper 22, 247-50, 1953.)
 Phys. Abstr. 56, No. 5219, July 1953.

A. Linz, Jr., "Some electrical properties of
 strontium titanate,"
 Phys. Rev. 91, 753-4, Aug. 1, 1953.

General	Ferroelectrics	Resonators	Transducers	Ultrasonics
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	General	Piezoelectrics	Resonators	Transducers	Ultrasonics
A. A. McKenzie, "Ultrasonic thickness measurement," Electronics <u>21</u> 144-46, Jan. 1953.					x
F. L. McNamara, T. F. Rogers, "Direct viewing of an ultrasonic beam in a transparent solid," Jour. Acous. Soc. Amer. <u>25</u> , 323-9, Mar. 1953.					x
M. McQuarrie, "Time effects in the hysteresis loop of polycrystalline bariumtitanate," Jour. Appl. Phys. <u>24</u> , 1334-5, Oct. 1953.		x			
H. J. McSkimin, "Measurement of elastic constants at low temperatures by means of ultrasonic waves," Jour. Appl. Phys. <u>24</u> , 983-97, Aug. 1953.					x
R. A. Mapleton, "Diffraction patterns for solid delay lines," Jour. Acous. Soc. Amer. <u>25</u> , 516-524, May 1953.					x
A. W. Marsh, E. K. Williams, "The performance of an 80 KC/S crystal controlled oscillator," Tele. Res. Estab. (Gt. Brit.) tech. note no. 153. Sept. 22, 1952.			x		
M. Marutake, "The effect of electric field on the domain structures in rochelle salt," Wireless Engr. <u>30</u> , No. 2050, July 1953.		x			
N. P. Mason, "Use of barium titanate in capacitors, transducers, dielectric amplifiers and storage devices." (talk given to IRE, Connecticut Valley, Middletown, Ct.) Bell Lab. Rec. <u>XXXI</u> , 39, Jan. 1953.		x			

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
W. P. Mason, "Use of temperature and time stabilized barium titanate ceramics in transducers, mechanical wave transmission systems and force measurements," (talk given at First International Congress on Electro-Acoustics, Holland) Bell Lab. Rec. <u>XXXI</u> , 319, Aug. 1953.		x		x	
W. P. Mason, "Low frequency-temperature coefficient barium titanate ceramics which are stable with time," (talk given at Dept. of Commerce, Washington, D. C., and Acous. Soc. Meeting, Philadelphia, Penn.) Bell Lab. Rec. <u>XXXI</u> , 280, July 1953. (Program) Acous. Soc. Amer. 19-20, May 1953.) Jour. Acous. Soc. Amer. <u>25</u> , 833-34, July, 1953.		x		x	
W. P. Mason, "Ferroelectrics and the dielectric amplifier," (talk given at the IRE N. Y. Section, New York City.) Bell Lab. Rec. <u>XXXI</u> , 511, Dec. 1953.		x			
W. P. Mason, "Properties of a tetragonal anti-ferroelectric crystal," Phys. Rev. <u>88</u> , 480-484, Nov. 1, 1952.		x			
W. P. Mason, B. T. Matthias, "Piezoelectric dielectric and elastic properties of $\text{ND}_4\text{D}_2\text{PO}_4$ (Deuterated ADP)," Phys. Rev. <u>88</u> , 477-79, Nov. 1, 1952.		x			
W. P. Mason, "Domain wall relaxation in nickel and low temperature relaxations in fused quartz," (talk given at a physics seminar, Goettingen, Germany) Bell Lab. Rec. <u>XXXI</u> , 319, Aug. 1953.		x			

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
Massachusetts Institute of Technology - "An x-ray diffraction study of barium titanate," Contra. N5ori-07801, N5ori-07858: Tech. report no. 59 Jan. 1953. (H. T. Evans, Jr.)		x			
"Effect of a two-dimensional pressure on the curie point of barium titanate," Tech report no. 74 Oct. 1953. (P. W. Forsberg, Jr.)		x			
"A graphical method of evaluating certain crystallographic structure factors," Tech. report no. 65, Feb. 1953 TAE U - 9, AD-6, 196, May 8, 1953. (H. J. Grenville-Wells)	x				
"Behavior of slow electrons in polar crystals," Insulation progress report no. 55 Dec. 1952. (E. P. Gross)		x			
"The growing of lead titanate crystals and some of their properties," Tech. report no. 56, Dec. 1952. (H. H. Rogers)		x			
"Tables of dielectric materials volume IV," Tech. report no. 57, Jan. 1953. (A. von Hippel)		x			
"Theory and application of dielectric materials," Summer session course, Sept. 31-2, 1952. at Lab. for Insulation Research, (A. von Hippel)	x	x			

Massachusetts Institute of Technology -
 Contrs. N5ori-07801, N5ori-07858:
 Progress report no. XIV
 December 1953 (A. von Hippel)

L. E. Mathieu, J. P. Mathieu, "Spectre de
 diffusion des cristaux piézoélectriques. IV. Blende,"
 Comp. Rend. 236, 371-73, Jan. 26, 1953.

J. P. Mathieu, L. C. Mathieu, "Anomalies dans
 le spectre de diffusion des cristaux piézoélectriques.
 III. Perchlorate de lithium hydraté," (Jour. de phys.
 et le Radium 13, 271-74, 1952.)
 Physikalische Berichte 32, 724, May 1953.

B. T. Matthias, "Survey of ferro-electrics,"
 (talk given at Argonne National Laboratory,
 Chicago)
 Bell Lab. Rec. XXXI, 400, Oct. 1953.

O. Mattiat, "Tranducers for producing ultrasonic
 waves,"
 Jour. Acous. Soc. Amer. 25, 291-96, Mar. 1953.

J. E. May, "Characteristics of ultrasonic delay
 lines using quartz and barium titanate ceramic
 transducers," (talk given at Acous. Soc. Amer.
 Meeting, Cleveland)
 Bell Lab. Rec. XXXI, 511, Dec. 1953.

General
 Ferroelectrics
 Resonators
 Transducers
 Ultrasonics

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J. E. May, "Characteristics of ultrasonic delay lines using quartz and barium titanate ceramic transducers,"

Program Acous. Soc. Amer., Cleveland, Ohio, Oct. 15, 16 and 17, 1953.

R. W. Mebs, J. H. Darr and J. D. Grimsley, "Metal ultrasonic delay lines,"

Jour. Res. Nat. Bur. Stand. 51, 209-20, Nov. 1953. (Research paper 2453).

J. Medill, "A miniature piezoelectric microphone," Program Acous. Soc. Amer. 11, May 1953.

R. Meier, K. Schuster, "On the theory of sound-wave propagation in piezoelectric crystals,"

Ann. Phys. Lpz. 11, 397-406, Feb. 10, 1953.

R. Meier, H. Trommler, "Zur erzeugung von Dickenschwingungen mit ammoniumphosphatkristall-platten,"

Ann. der Phys. 12, 393-97, Sept. 1953.

R. Meier, K. Schuster, "Zur theorie der anregung von Dickenschwingungen piezoelektrischen kristall-platten,"

Ann. der Phys. 12, 386-92, Sept. 1953.

General
Ferroelectrics
Resonators
Transducers
Ultrasonics

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	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
W. J. Merz, "Double hysteresis loop of BaTiO_3 at the curie point," (talk given to the Amer. Phys. Soc., Cambridge, Mass.), (Bell Lab. Rec. <u>XXXI</u> , 119, Mar. 1953.) Phys. Rev. <u>91</u> , 518-18, Aug. 1, 1953.		x			
V. Met, E. Skudrzyk, "Efficient small apparatus for ultrasonic testing of materials with barium-titanate oscillator," Wireless Engr. <u>30</u> , No. 1756, June 1953. (Elektrotech. u. Maschinenb. <u>69</u> 519-23, Dec. 1, 1952.)					x
R. D. Mindlin, (Columbia University) - "Investigations of the mathematical theory of vibration of anisotropic bodies," Contr. DA36-039-sc-15481: Quarterly report no. 3, Oct. 1 - Dec. 31, 1952. TAB U - 25, AD-13 193, Sept. 18, 1953.			x		
C. R. Mingins et al. (Tufts College) - "An investigation of the characteristics of electromechanical filters," Contr. DA36-039-sc-5402: Quarterly report no. 7, Sept. 1, 1952. Quarterly report no. 8, Dec. 1, 1952. Quarterly report no. 9, Mar. 1, 1953. Quarterly report no. 11, Aug. 15, 1953.			x		
C. R. Mingins et al. "The effects of grooves in piezoelectric filter plates," (Bulletin) Amer. Phys. Soc. <u>28</u> , 47, April 30, 1953.			x		
I. G. Mikhailov, "Absorption of ultrasonic waves in certain viscous liquids," Doklady Akademii Nauk SSSR, <u>69</u> , 991-93, 1953.					x

I. G. Mikhailov, "Interaction of Ultrasonic waves in liquids,"
Doklady Akademii Nauk SSSR 89, 663-64, 1953.

H. N. Morris, "Ultrasonic porpoise communications,"
Electronics 26, 208-14, Aug. 1953.

Motorola, Inc., "Low frequency electro-mechanical filters," Contr. DA36-039-sc-15535:

Quarterly progress report no. 1

May 1, 1952 - July 31, 1952.

Quarterly progress report no. 2

Aug. 1, 1952 - Oct. 31, 1952.

Quarterly progress report no. 3

Nov. 1, 1952 - Jan. 31, 1953.

Quarterly progress report no. 4

Feb. 1, 1953 - April 30, 1953.

Quarterly progress report no. 5

May 1, 1953 - July 31, 1953.

(B. Niederman et al.)

"Low frequency ring resonators,"

Contr. DA36-039-sc-15338

Quarterly progress report no. 4

Mar. 25, 1952 - June 25, 1952.

Quarterly progress report no. 6

Dec. 25, 1952 - Mar. 25, 1953.

Quarterly progress report no. 7

Mar. 25, 1953 - June 25, 1953.

Quarterly progress report no. 8

June 25, 1953 - Sept. 25, 1953.

(B. Niederman et al.)

N. F. Mott, "Dislocations, plastic flow and creep,"
(Bakerian lecture, 1953,)

Proc. Royal Soc. 220, 1-14, Oct. 1953.

General
Ferroelectrics
Resonators
Transducers
Ultrasonics

x

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x

P. E. Mulvihill, (Sig. Corps Engr. Labs.)
 "Chemical and electrolytic methods of plating
 electrodes on crystals for frequency control,"
 Contr. DA3-29-11-021

W. W. Mumford, "Optimum piston position for
 wide-band coaxial-to-waveguide transducers,"
 Proc. IRE, 41, 256-261, 1953.

M. T. Nadir, (DuMont Labs., Inc.) -
 "A compilation of analog transducers,"
 TAB U - 11, AD-6, 965, May 22, 1953.

National Bureau of Standards -
 "Quarterly progress report, Jan. 1 - Mar. 31,
 1952," NBS report no. 1753, (W.A. Wildhack)
 T.I.P. U23365, Nov. 25, 1952.

"Detwinning quartz crystals,"
 Contr. 186-PHBP-50-6:
 Quarterly report no. 14,
 May 1 - July 31, 1952,
 TAB U 4, AD1867, April 6, 1953.
 Quarterly report no. 15,
 Sept. 1 - Nov. 30, 1952.
 (W. Howard et al)

"Dielectrics for ceramic components,"
 Contr. NOP-15005:
 Quarterly progress report no. 1
 July 1 - Oct. 1, 1952
 (Part 1 of its report no. 2024)

"Development of inorganic films with high
 dielectric constant,"

Contr. 236-PHBP-51-04:
 Quarterly progress report no. 1
 July 1 - Oct. 1, 1952.
 (Part 2 of its report no. 2024)
 (G. R. Shelton et al)

General	Electronics	Electronics	Electronics	Electronics
		x		
			x	
				x
x				
		x		
	x			
	x			

National Bureau of Standards -
 "Precision temperature control in connection
 with quartz crystals,"
 Contr. 21X2040 3-3237 P1630-07 S28-043 (31630)
 Quarterly progress report no. 1
 Dec. 8, 1952 - Mar. 8, 1953.
 (R. Alvarez)

Naval Research Laboratory -
 "Surface structure of quartz crystals,"
 NRL report no. 4065, Oct. 31, 1952.
 (G. W. Arnold, Jr.)
 "Current status of quartz crystal units and cir-
 cuitry for frequency control,"
 NRL report no. 4140, April 29, 1953.
 (D. A. Venn)
 TAB U - 20, AD-10, 802, July 27, 1953.
 "Preparation of reproducible barium titanate
 ceramics,"
 NRL report no. 4176, June 2, 1953.
 (R. M. Challaan, J. F. Murray,)
 TAB U - 25, AD-13 320, Sept. 18, 1953.
 "An electron diffraction investigation of the
 disturbed surfaces of quartz due to abrasion,"
 NRL report no. 4271, Dec. 9, 1953.
 (G. W. Arnold, Jr.)

J. T. Nelson, (University of Oregon) -
 "Investigation of scintillation counters for the
 detection of soft x-rays," Contr.
 Contr. DA36-039-sc-5599:
 Quarterly progress report no. 7
 Jan 1 - Mar. 31, 1953.

General	Ferroelectrics	Resonators	Transducers	Ultrasonics
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x				
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	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
J. T. Nelson, M. Taken (University of Oregon) - "Investigation of scintillation counters for the detection of soft x-rays," Contr. DA35-039-sc-5589: Quarterly progress report no. 8 April 1 - June 30, 1953.	x				
H. J. Neugebauer, "Clausius-Mosotti equation for anisotropic crystals," (Let. to Ed.) Phys. Rev. <u>88</u> , 1210, Dec. 1, 1952.	x				
G. S. Newell, (Princeton University) - "The modulation-grid method for eliminating doppler broadening of microwave spectroscopic lines," Cont. DA36-039-sc-5541: Final report, April 1, 1951 - Mar. 31, 1952.	x				
New York University - "Investigation, studies and evaluation of performance of crystal unit characteristics," Contr. DA36-039-sc-5493: Quarterly report no. 4, June 1 - Sept. 15, 1952, (L. E. Silver et al) TAB U 4, AD2413, April 6, 1953. Quarterly report no. 5, Sept. 15 - Dec. 15, 1952, (D. Cohen, L. Silver) TAB U - 3, AD 1 300, Mar. 28, 1953. Quarterly report no. 6, Dec. 15, 1952 - Mar. 15, 1953. (D. Cohen) Quarterly report no. 7, Mar. 15 - June 15, 1953, (D. Cohen) Quarterly report no. 8, June 15 - Sept. 15, 1953, (D. Cohen)		x			

B. Niederman, S. F. Lapin, (Motorola, Inc.)

"Low frequency electro-mechanical filters, "

Contr. DA36-039-sc-15535:

Quarterly progress report no. 1

May 1 - July 31, 1952.

Quarterly progress report no. 2

Aug. 1 - Oct. 31, 1952.

Quarterly progress report no. 3

Nov. 1, 1952 - Jan. 31, 1953.

Quarterly progress report no. 4

Feb. 1, - April 30, 1953.

Quarterly progress report no. 5

May 1 - July 31, 1953.

"Low frequency ring resonators, "

Contr. DA36-039-sc-15338:

Quarterly progress report no. 4

Mar. 25 - June 25, 1952.

(B. Niederman, L. G. Chase)

Quarterly progress report no. 6

Dec. 25, 1952 - Mar. 25, 1953.

(B. Niederman, L. G. Chase, R. Christy)

Quarterly progress report no. 7

Mar. 25 - June 25, 1953.

(B. Niederman, L. G. Chase, R. Christy)

Quarterly progress report no. 8

June 25 - Sept. 25, 1953.

(B. Niederman, L. G. Chase)

North American Philips Co., Inc.,

"X-ray spectrograph chart, "

Electronics 26, 332-34, Feb. 1953.

L. E. Norton, (RCA) - "Investigation and study
of practical utilization of molecular absorption
phenomena for frequency control, "

Contr. DA36-039-sc-15525:

Quarterly report no. 4, Feb. 1 -

April 30, 1953.

General	Ferroelectrics	Resonators	Transducers	Ultrasonics
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x

x

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
N. S. Novosil'tsev, A. L. Khodakov and M. S. Shul'man, "The effect of deviations from the stoichiometric composition on the properties of BaTiO ₃ ceramics in strong fields," (Zh. Eksp. Teor. Fiz. <u>23</u> , 330-39, 1952) Proc. IRE <u>41</u> , 1690, Nov. 1953.	x				
N. S. Novosil'tsev, and others, "The influence of departures from stoichiometric composition on the properties of BaTiO ₃ ceramic in strong fields," (Zh. Eksp. Teor. Fiz. <u>23</u> , No. 3(9) 336-9, 1952 In Russian) Phys. Abstr. <u>56</u> , No. 5457, Aug. 1953.	x				
N. S. Novosil'tsev and others, "Metastable states of BaTiO ₃ ," (Dokl. Akad. Nauk SSSR <u>83</u> , 829-31, 1952) Phys. Abstr. <u>56</u> , No. 5454, Aug. 1953.	x				
H. I. Oshry, J. Minkowski, "Piezoelectric activity of barium titanate," Electronics <u>26</u> , 230-34, July 1953.	x				
G. E. Owen and others, (Antioch College) - "Quartz research project" Contr. DA36-039-sc-15508: Progress report no. 2 July 15, 1952 - Jan. 15, 1953 TAB U - 9, AD-5,658, May 8, 1953. Progress report no. 3 Jan. 15 - Mar. 15, 1953. TAB U - 22, AD-11,798, Aug. 21, 1953.	x				

G. E. Owen. and others, (Antioch College) -
 "Quartz Research Project,"
 Contr. DA36-039-sc-15508:
 Final report, Mar. 15 - June 14, 1953.

R. B. J. Palmer, "A thermoelectric method of
 comparing intensities of ultrasonic fields in
 liquids,"
 Jour. Sci. Instr. 30, 177-79, June 1953.

W. Parrish, M. G. Ekstein and B. W. Irwin,
 edited by;
 "Data for x-ray analysis," (Tables for computing
 the lattice constant of cubic crystals) Vol. II.
 (One of two series to be published under the
 heading "Data for X-ray Analysis" by Philips
 Laboratories, Inc. pp 83. 1953.
 Jour. Frank. Inst. 256, 391, Oct. 1953.

S. Parthasarathy and others, "Étude de
 l'absorption des ondes ultrasonores de 5MHz dans
 les liquids organiques par la methode des
 pressions de radiation,"
 Le Jour de Phys. Et Le Radium 14, 541-46,
 Oct. 1953.

S. Parthasarathy and others, "The piezo-electric
 oscillations of a quartz crystal at its odd, even and
 half-odd harmonics,"
 Ann. der Phys. 12, 1-7, April 1953.

General
 Ferroelectrics
 Resonators
 Transducers
 Ultrasonics

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	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
S. Parthasarathy and others, "Piezo-electric oscillations of quartz plates at even and half-odd harmonics," Nature (London) <u>171</u> , 216-17, Jan. 31, 1953.			x		
S. Parthasarathy and A. F. Chhapgar, "Viscosity as a factor in the anomalous absorption of ultrasonic waves in liquids," Ann. der Phys. <u>12</u> , 316-20, July 1953.					x
S. Parthasarathy, and others, "Die Abhängigkeit der schallintensität am schallstrahler von absorptionskoeffizienten in flüssigkeiten," Z. für Phys. <u>134</u> , 408-12, Mar. 1953.					x
S. Parthasarathy and others, "Thermische untersuchungen über die absorption von ultraschallwellen in flüssigkeiten," Z. für Phys. <u>135</u> , 395-402, July 1953.					x
S. Parthasarathy and others, "Equivalence of sonic and thermal energies," Ann. der Phys. <u>12</u> , 8-16, April 1953.					x
W. Pavelick and others, (Penn State College) - "Ferroelectric and high dielectric crystals - crystal growth from solutions," Contr. AF-33(038)-12645: Tech. report no. 8, Oct. 1, 1952 TAB U - 14, AD-9,050, June 15, 1953.		x			
T. A. Pendleton, (National Bureau of Standards) "Underground quartz crystal resonators," Report No. 2035, Oct. 29, 1952. TAB U - 4, AD-3024, April 6, 1953.			x		

E. S. Pennell, "Vitreous silica for ultrasonic delay-line applications,"
Proc. Nat. Elec. Conf., Chicago, 8, 799-810,
1952.

Pennsylvania State College-

"Some aspects of neutron single crystal analysis,"
Contr. N6onr-26916: (R. Pepinsky) (1952)
TAB U -19, AD-10,375, July 17, 1953.

"Study of phase transitions in perovskite-type
crystals," Contr. N6onr-26919 + AF33(038)12645):
Nov. 1, 1952, (G. Shirane, R. Pepinsky),
TAB U -19, AD-10,374, July 17, 1953.

"Relation of crystal structure and dielectric
properties of some perovskite-type crystals,"
Contr. AF 33(038)12645): (G. Shirane, R. Pepinsky)
June 18, 1952.

TAB U - 19, AD-10,373, July 17, 1953.

"Stroboscopic x-ray studies of oscillating crystals,"
Contr. DA36-039-sc-21: (R. Pepinsky)

Interim progress report no. 11

May 15 - Aug. 15, 1952,

TAB U - 15, AD-9,145, June 19, 1953.

Final report, Jan. 1953.

TAB U - 25, AD-14,053, Sept. 30, 1953.

"Ferroelectric and high dielectric crystals -
dielectric measurements of crystals,"

Contr. AF33(038)12645):

Progress report no. 1, tech. report
no. 3, Feb. 1, 1952 - (R. Pepinsky)

TAB U -15, AD9,047, June 19, 1953.

"Specific heat anomalies of perovskite-type
ferroelectrics," (G. Shirane, R. Pepinsky)

Tech. report no. 5, Oct. 1, 1952.

TAB U -18, AD-10,371, July 13, 1953.

General	Ferroelectrics	Resonators	Transducers	Ultrasonics
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x				
	x			
	x			
x	x			
	x			
	x			

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
Pennsylvania State College -					
"Ferroelectric and high dielectric crystals. Methods for the preparation of deuterio compounds," Contr. AF 33(038)12645: (E. Zemlyan, R. Pepinsky), Tech. report no. 7, Dec. 1, 1952. TAB U -18, AD-10,372, July 13, 1953.		x			
"Crystal growth from solutions," Progress report, Tech. report no. 3. Oct. 1, 1952 (W. Pavelick and others), TAB U - 14, AD-9,050, June 15, 1953.	x				
"Aluminum titanate and related compounds," Contr. AF(616)139: (N.R. Thielke) June 1953. WADA Tech. report no. 53-156, TAB U - 26, AD-14 004, Sept. 30, 1953.		x			
"X-ray diffraction studies of piezoelectric crystals," Contr. DA36-039-sc-42598: First quarterly progress report Nov. 15, 1952 - Feb. 1953.	x	x			
"Ultrasonics in metals," Contr. DA36-061-ord-106: First Annual report, Sept. 1, 1951 Aug. 31, 1952. (J. N. Brennan) TAB U - 11, AD-3,319, May 22, 1953.					x
"Analysis of damping in elastic solids," Contr. DA36-061-ord-237: (C. E. Duke) Tech. report no. 1, Sept. 1, 1952 - Feb. 28, 1953. TAB U - 6, AD-4,483, April 20, 1953.	x		x		
"Ceramic probe microphones," Contr. AF33(038)786: (E. Ackerman, W. Holak), Tech. report no. 53-77, Mar. 1953. TAB U-24, AD-12 966, Sept. 9, 1953.				x	
"Hydrothermal crystal studies," Contr. DA36-039-sc-5594: (R. Roy and others), Quarterly progress report no. 7, Jan. 1 - Mar. 31, 1953.	x				
R. Pepinsky (Penn State College) -					
"Stroboscopic x-ray studies of oscillating crystals," Contr. DA36-039-sc-21: 11th interim progress report. May 15 - Aug. 15, 1952. TAB U - 15, AD-9,145, June 19, 1953.	x	x			

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
R. Pepinsky (Penn State College) - "Some aspects of neutron single crystal analysis," Contr. N6onr-26216, 1952. TAB U - 19, AD-10,375, July 17, 1953. "Stroboscopic x-ray studies of oscillating crystals," Contr. DA36-039-sc-21: Final report, Jan. 1953. TAB U -26, AD-14,083, Sept. 30, 1953. "Ferroelectric and high dielectric crystals - dielectric measurements of crystals," Contr. AF 33(038)12645: Progress report no. 1, tech report no. 3. Feb. 1, 1952. TAB U -15, AD-9,047, June 19, 1953. "X-ray diffraction studies of piezoelectric crystals," Contr. DA36-039-sc-42598: First quarterly progress report, Nov. 15, 1952 - Feb. 1953.	x	x			
R. Pepinsky (Penn State College) - "Some aspects of neutron single crystal analysis," Science <u>117</u> : 1-3, Jan. 2, 1953.	x	x			
T. A. Perls, "Transient response of accelerometers," Jour. Acous. Soc. Amer. <u>25</u> , 1199-1200, Nov. 1953.				x	
T. A. Perls, C. W. Kissinger, "A barium-titanate accelerometer with wide frequency and acceleration ranges," NBS report no. 2390, April 1953. TAB U - 26, AD-14 152, Sept. 30, 1953.				x	
T. A. Perls, (NBS), "Proceedings of symposium on barium titanate accelerometers," NBS report 2654, Aug. 1953.		x		x	

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
G. A. Petticrew and others (Univ. of Illinois) - "Theory of oscillator circuits," Contr. DA36-039-sc-205: Interim progress report no. 205-8, Oct. 15, 1952 - Jan. 15, 1953.			x		
G. A. Petticrew, B. Silverman, (Univ. Illinois) - "Theory of oscillator circuits," Contr. DA36-039-sc-205: Interim progress report no. 205-9, Jan. 15, 1953 - April 15, 1953.			x		
A. Plekara, Z. Pajak, "Thermal Pseudohysteresis of the dielectric constant for ferroelectric titanates," Acta Phys. Polon. <u>XI</u> , 256, 1952.		x			
A. Plekara, Z. Pajak, "Effect of Electric field on the dielectric constant of ferroelectric titanates," Acta Phys. Polon. <u>XII</u> , 170-180, 1953.		x			
A. C. Prichard, M. Bernstein, "Crystal impedance meters replace test sets," Electronics <u>26</u> , 176-80, May 1953.			x		
Princeton University - "The modulation-grid method for eliminating doppler broadening of microwave spectroscopic lines," Cont. DA36-039-sc-5541: Final Report, April 1, 1951 - Mar. 31, 1952. (G. S. Newell)	x				
"Investigation of the effect of gas collisions upon the doppler breadth of spectral lines," Contr. DA36-039-sc-42539: Quarterly report no. 4, Mar. 15 - June 15, 1953. (J. F. Wittke)	x				

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
R. L. Pritchard, "Optimum directivity patterns for linear point arrays," Jour. Acous. Soc. Amer. <u>25</u> , 879-891, Sept. 1953.				x	
R. L. Pritchard, "Approximate calculation of the directivity factor of linear point arrays," (Letter to the editor) Jour. Acous. Soc. Amer. <u>25</u> , 1010-11, Sept. 1953.				x	
C. F. Pulvari, "Determining the usefulness of barium titanate material for memory devices in large scale digital calculators," (University of America), Contr. AF 18(600)-106: Progress report no. 1, April, 1952. TAB U -2, AD-663, Mar. 20, 1953. Progress report no. 2, July, 1952. TAB U 2, AD-664, Mar. 20, 1953. Progress report no. 5, April 1953. TAB U - 18, AD-8, 660, June 29, 1953.		x			
B. Püschel, "Voltage measurements on rochelle salt under compressive stress," Arch tech. Messen, 197-98, September, 1952.		x			
Radio Corporation of America - (E. M. Washburn) - "Research investigations pertaining to low frequency contoured AT-cut quartz plates," Contr. DA36-038-sc-5460: Quarterly progress report no. 7, July 15 - Oct. 14, 1952. TAB U - 8, AD-6, 242, May 8, 1953. Final report, Jan. 14, 1951 - Jan. 14, 1953. TAB U - 18, AD-8, 833, June 29, 1953,			x		

Radio Corporation of America - (L. E. Norton)
 "Investigation and study of practical utilization
 of molecular absorption phenomena for
 frequency control," Contr. DA36-039-sc-15525:

Quarterly report no. 4, Feb. 1 -
 April 30, 1953.

"Study of aging effects on military plated
 crystal units," Contr. DA36-039-sc-42670:

First Quarterly progress report,
 Feb. 1 - April 30, 1953.

(E. M. Washburn)

"Crystal units, low frequency services for
 research and development of,"

Contr. NChsr-52463:

Interim development report no. 5,
 June 8 - Sept. 7, 1952.

R. J. Raudebaugh and others, (Georgia Institute
 of Technology) - "Aging study of metal plating
 on quartz crystals," Contr. DA36-039-sc-147:

Quarterly report no. 6, Oct. 1, 1951 -
 Jan. 1, 1952.

TAB U - 7, AD-4, 475, April 24, 1953.

Quarterly report no. 7, Jan. 1 -
 April 1, 1952.

TAB U - 9, AD-6, 091; May 8, 1953.

Contr. DA36-029-sc-42453: (cont. of Contract
 DA36-039-sc-147.)

Quarterly report no. 2, Aug. 1 -
 Nov. 1, 1952.

Quarterly report no. 3, Nov. 1, 1952 -
 Feb. 1, 1953.

TAB U - 25, AD-13 814, Sept. 18, 1953.

Quarterly report no. 4, Feb. 1 -
 May 1, 1953.

Quarterly report no. 5, May 1 -
 Aug. 1, 1953.

General
 Electroelectrics
 Radiophysics
 Thermophysics
 Ultrasonics

J. R. Reitz, "Research on semiconductors and ferroelectrics in Zurich,"
 Tech. report no. ONRL-41-53,
 April 7, 1953.
 TAB U - 14, AD-8,692, June 15, 1953.

E. G. Richardson, BOOK REVIEW - "Ultrasonic Physics," (Elsevier Publishing Co., Houston, Texas, 1952. - pp x + 285)
 Amer. Jour. Phys. 21, 69, Jan. 1953.

E. Roedder, (University of Utah) -
 "Composition and significance of fluid filled inclusions in quartz and other minerals,"
 Contr. DA36-039-sc-42835:
 First quarterly progress report,
 Feb. 15 - May 15, 1953.

H. H. Rogers, (Massachusetts Institute of Technology) - "The growing of lead titanate crystals and some of their properties,"
 Contrs. N5ori-07801 and N5ori-07858,
 Tech. report no. 56,
 Dec. 1952.

G. L. Rogosa, G. Schwarz, "Extent of perfect single crystal regions within imperfect single crystals,"
 (Bulletin) Amer. Phys. Soc. 23, 22, Jan. 22, 1953.

G. L. Rogosa, G. Schwarz, "X-ray transmission studies of large imperfect crystals,"
 Jour. Appl. Phys. 24, 954-6, July 1953.

C. Rossetti, "Interferometer arrangements for the detection of ultrasonic waves,"
 Comp. Rend. Acad. Sci. (Paris) 235, 1484-86,
 Dec. 10, 1952.

General
 Ferroelectrics
 Resonators
 Transducers
 Ultrasonics

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	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
J. M. Ronan, (Signal Corps Engr. Lab.) - "Fabricating techniques for crystal unit CR-23/U (49.9 to 51.1 Mc),"			x		
Engineering report no. E-1108, Feb. 2, 1953.					
J. Roux, "Photodielectric effect, ferroelectricity, and thermoluminescence in zinc oxide under ultraviolet irradiation,"		x			
Comp. Rend. Acad. Sci. (Paris) <u>236</u> , 2492-94, (In French) June 29, 1953.					
R. Roy and others, (Penn State College) - "Hydrothermal crystals' studies,"	x				
Quarterly progress report no. 7, Jan. 1 - Mar. 31, 1953. (Contr. DA36-039-sc-5594)					
Rutgers University - "Improved ceramics," Contr. DA36-039-sc-5421:		x			
Quarterly progress report no. 6, Mar. 1 - June 1, 1952. T.I.P. U23140, Nov. 6, 1952.					
"The growth and investigation of ferroelectric and antiferroelectric crystals,"		x			
Contr. DA36-039-sc-42480:					
Quarterly tech. report no. 1, Sept. 1 - Dec. 1, 1952.(G. J. Walver)					
TAB U -10, AD-6, 551, May 16, 1953.					
Quarterly tech. report no. 2, Dec. 1, 1952 - Mar. 1, 1953.					
TAB U - 21, AD-11, 305, July 31, 1953.					
Quarterly tech report no. 3, Mar. 1 - June 1, 1953.					
TAB U - 26, AD-14, 419, Sept. 30, 1953.					

G. Sabatier, Une nouvelle chambre de rayons X pour l'etude de la diffraction des raies en retour. - Application au quartz,"
Comp. Rend. 257, 77, July 6, 1953.

H. Sachse, "Über titanate mit hoher dielektrizitätskonstante," (Z. angew. Phys. 1, 473-84, Aug. 1949.)
Physikalische Berichte 32, 1050, July 1953.

I. Saito, N. Inoue, "Electro-acoustic constants of piezo-electric vibrators. I. Bending vibration of trapezoidal vibrators," (Doshisha Engng. Rev. 2, 11-16, Sept. 1951)
Elec. Engr. Abstr. Section B, 56, 686, No. 5067, Dec. 1953.

E. I. Salkovitz, P. L. Smith, Elastic deformation in ammonium dihydrogen phosphate crystals,"
(Bulletin) Amer. Phys. Soc. 28, 21, Jan. 22, 1953.

P. E. Sarzhevski, "Dependence of the electrical conductivity of quartz on the electrical field, the temperature and the magnetic field," (Comp. Rend. Acad. Sci. (URSS) 82, 371-74, in Russian Feb. 1, 1952.)
Wireless Engr. 30, No. 1378, May 1953.

N. Sata, M. Okuyama and H. Akao, "Colloid investigations by ultrasonic waves,"
Jour. Acous. Soc. Japan 8, 28-32, Mar. 1953.

E. Sawaguchi, "Ferroelectricity versus anti-ferroelectricity in the solid solution of PbZrO_3 and PbTiO_3 ,"
Jour. Phys. Soc. Japan 8, 615-629, Sept./Oct. 1953.

General	Ferroelectrics	Resonators	Transducers	Ultrasonics
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A. Scheibe, "Pendeluhr, quartzuhren und atomuhren als zeitstandards,"
Z. angew. Physik 5, 307-317, April 15, 1953.

A. Scheibe, "Die physikalisch technische bundesanstalt" "Ihre aufgaben und bedeutung fur die technik,"
Sonderdruck aus ETZ-A, 3, 65, Feb. 1953.

G. R. Shelton and others,) (National Bureau
of Standards) - "Dielectrics for ceramic
components," Contr. NPO-15005:
Quarterly progress report no. 1,
July 1 - Oct. 1, 1952
(Pt. 1 of its report no. 2024,
TIP U25480-U25481)
Quarterly progress report no. 1,
July 1 - Oct. 1, 1952
(Pt. 2 of its report no. 2024 of
TIP U25490-U25481.)

G. Shirane and others, "Phase transitions in the
 NaNbO_3 - KNbO_3 system,"
Phys. Rev. 92, 845, Nov. 1, 1953.

G. Shirane, R. Pepinsky, "Phase transitions in
Antiferroelectric PbHfO_3 ,"
(Bulletin) Amer. Phys. Soc. 28, 14, Mar. 26, 1953.

G. Shirane, A. Takeda, "Transition energy and
volume change at three transitions in barium
titanate,"
Wireless Engr. 30, No. 2053, July 1953.

General	Ferroelectrics	Resonators	Transducers	Ultrasonics
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	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
G. Shirane, R. Pepinsky, "Dielectric properties and phase transitions of $\text{Cd}_2\text{Nb}_2\text{O}_7$ and $\text{Pb}_2\text{Nb}_2\text{O}_7$," Phys. Rev. <u>92</u> , 504, Oct. 15, 1953.		x			
G. Shirane, R. Pepinsky (Penn State College) - "Ferroelectric and high dielectric crystals. Specific heat anomalies of perovskite-type ferroelectrics," Contr. AF 33(038)12645): Tech report no. 5, Oct. 1, 1952, TAB U 18 , AD-10,371, July 13, 1953.		x			
"Relation of crystal structure and dielectric properties of some perovskite-type crystals," Contr. AF 33(038)12645): June 18, 1952. TAB U - 19, AD-10,373, July 17, 1953.		x			
"Study of phase transitions in perovskite-type crystals," Contrs. N6onr-26919 and AF 33(038)12645): Nov. 1, 1952. TAB U - 19, AD-10,374, July 17, 1953.		x			
R. A. Shunk and others, "Ring-shaped piezoelectric gauge for shock tube," Rev. Sci. Instr. <u>24</u> , 169-70, Nov. 1953.				x	
Signal Corps Engineering Laboratories - J. M. Ronan, "Fabricating techniques for crystal unit CR-23/U (49.9 to 51.1 Mc), " Engr. report no. E-1108, Feb. 2, 1953.			x		
Signal Corps Engineering Laboratories - P. E. Mulvihill, "Chemical and electrolytic methods of plating electrodes on crystals for frequency control," Contr. DA3-99-11-021: Engr. report no. E-1111, April 8, 1953.			x		

L. Silver, E. Stronglin and A. Yevlove,
(New York University) - "Investigation, studies
and evaluation of performance of crystal unit
characteristics," Contr. DA36-039-sc-5493:

Quarterly report no. 4

June 1 - Sept. 15, 1952.

TAB U - 4, AD 2413, April 6, 1953.

E. V. Sinyakov and others, "Dynamics of barium
titanate polarization process," (Z. eksper. Teor.
Fiz. 23, 240, 1952, In Russian)
Phys. Abstr. 58, No. 3290, May 1953.

G. I. Skanavi, "Dielectric materials,"
(Priroda, 23-32, June 1952)
Wireless Engr. 30, No. 1372, May 1953.

C. S. Smith, J. R. Haynes, "Piezoresistance effect
in germanium,"
(Bulletin) Amer. Phys. Soc. 28, 67, April 30, 1953.

H. M. Smith, "Quartz clocks of the Greenwich
Time Service," (Mon. Not. R. astr. Soc. 113,
67-80, 1953.)
Wireless Engr. 30, No. 3354, Nov. 1953.

R. Smoluchowski, J. E. Mayer and W. A. Weyl,
BOOK REVIEW - "Phase transformations in solids,"
(New York: Wiley; London: Chapman & Hall,
1951, pp x + 660, \$9.50.)
Proc. Phys. Soc. 65E, 1009, Dec. 1, 1952.

General
Ferroelectrics
Resonators
Transducers
Ultrasonics

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	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
V. S. Sokolov, "Ultrasonic detection of stratifications in materials without machining of surface," (Elekt. Stantsii, No. 1, 24-7, In Russian, 1953) Phys. Abstr. <u>56</u> , No. 7522, Nov. 1953.					x
R. A. Spears, "Some notes on the design and application of quartz crystals," Wireless Engr. <u>30</u> , No. 441, Feb. 1953.			x		
Statham Laboratories, Inc. "Transducer," Electronics <u>26</u> , 392, Nov. 1953.				x	
J. Q. Stewart, "The kinds of energy," (Bulletin) Amer. Phys. Soc. <u>26</u> , 27, Jan. 22, 1953.	x				
F. W. Stubner, "Acceleration effects on electron tubes," Bell Sys. Tech. Jour. <u>XXXII</u> , 1203-29, Sept. 1953.				x	
G. Sutherland and others, (Univ. of Michigan) - "Infrared studies of crystals," Contr. DA36-039-sc-5581: Annual report no. 1, May 15, 1951 - May 15, 1952. Quarterly progress report no. 4, May 15 - Aug. 15, 1952.	x				
W. F. G. Swann, "The case of charged density distribution versus semipermanent polarization as a basis for electret behavior," (Bulletin) Amer. Phys. Soc. <u>28</u> , 23, April 30, 1953.	x				
W. F. G. Swann, "Fundamentals in the behavior of electrets," Jour. Frank. Inst. <u>255</u> , 513-30, June 1953.	x				

G. J. Szasz, "Nucleation, evaporation and related problems in crystal chemistry,"
 Tech. report no. ONR 148-53.
 May 12, 1953.
 TAB U - 26, AD-13, 896, Sept. 30, 1953.

S. Tanaka, "Measurement of the thickness of metal plate by ultrasonic harmonic method.
 I. On the condition of the thickness resonance,"
 (Sci. Rep. Res. Insts. Tohoku Univ. A, 2, 917-24, Dec. 1950)
 Phys. Abstr. 56, No. 3934, June 1953.

S. Tanaka, "Measurement of the thickness of metal plate by ultrasonic harmonic method.
 II. Electronic operation and results of a field inspection," (Sci. Rep. Res. Insts. Tohoku Univ. A, 3, 201-8, April 1951)
 Phys. Abstr. 56, No. 3935, June 1953.

S. Tanaka, S. Yamada, "Measurement of the thickness of metal plate by ultrasonic harmonic method. III. On the resonance of lower harmonic order," (Sci. Rep. Res. Insts. Tohoku Univ. A, 3, 393-6, June 1951)
 Phys. Abstr. 56, No. 3935, June 1953.

E. A. Taylor, D. C. Groves, (Post Office Engr. Dept. Gt. Brit.) - "Artificially-grown piezo-electric crystals. Part 3. Production of ethylene diamine tartrate crystals,"
 Research report no. 12491, Oct. 1952.
 TAB U - 24, AD-12 722, Sept. 9, 1953.

General
 Ferroelectrics
 Resonators
 Transducers
 Ultrasonics

J. R. Tessman, "Antiferroelectrics in an applied field,"
(Bulletin) Amer. Phys. Soc. 28, 23, April 30, 1953.

R. W. Thickers, R. J. MacDonald, "Electret-like behavior in polarized BaTiO₃ ceramic,"
(Bulletin) Amer. Phys. Soc. 28, 46, Jan. 22, 1953.

N. R. Thielke, (Penn State College) -
"Aluminum titanate and related compounds,"
Contr. AF (S16)189:
WADC Tech. report no. 53-156
June 1953.
TAB U - 26, AD-14 004, Sept. 30, 1953.

H. Thurnauer, S. Roberts (edited by:)BOOK REVIEW
"Digest of the Literature of Dielectrics,"
Vol. XV - 1951. (Publ. Nat. Res. Coun. Nat.
Acad. Sci. U. S. A., No. 231, pp 203, (Sept. 15.
1952.)
Phys. Abstr. 56, No. 828, Feb. 1953.

E. G. Thurston, "Theoretical sensitivity of three types of rectangular bimorph transducers,"
Jour. Acous. Soc. Amer. 25, 870-73, Sept. 1953.

Y. Torikai, K. Negishi, "The application of the phase method in visualizing ultrasonic waves,"
Jour. Phys. Soc. Japan 8, 119-24, Jan/Feb. 1953.

General
Piezoelectrics
Resonators
Transducers
Ultrasonics

Tufts College - C. R. Mingins et al. -
 "An investigation of the characteristics of
 electromechanical filters,"
 Contr. DA36-039-sc-5402:
 Quarterly report no. 7, Sept. 1, 1952.
 Quarterly report no. 8, Dec. 1, 1952.
 Quarterly report no. 9, Mar. 1, 1953.
 Quarterly report no. 11, Aug. 15, 1953.

University of Illinois - G. A. Petticrew et al,
 "Theory of oscillator circuits,"
 Contr. DA36-039-sc-205:
 Interim progress report no. 205-8
 Oct. 15, 1952 - Jan. 15, 1953.
 Interim progress report no. 205-9
 Jan. 15, 1953 - April 15, 1953.

University of Michigan - G. Sutherland et al,
 "Infrared studies of crystals,"
 Contr. DA36-039-sc-5581:
 Annual report no. 1
 May 15, 1951 - May 15, 1952.
 Quarterly progress report no. 4
 May 15 - Aug. 15, 1952.

University of Minnesota - J. W. Gruner, L. Gardiner,
 "Twinning studies of quartz type structures,"
 Contr. DA36-039-sc-5419:
 Quarterly progress report no 4,
 Dec. 16, 1951 - Mar. 15, 1952.
 Quarterly progress report no. 5,
 Mar. 15 - June 15, 1952.
 TAB U - 8, AD-5,847, May 4, 1953.

General	Ferroelectrics	Resonators	Transducers	Ultrasonics

	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
University of Minnesota - J. W. Gruner, L. Gardiner, "Twinning studies of quartz type structures," Contr. DA36-039-sc-5419: Quarterly progress report no. 6 Sept. 16 - Dec. 15, 1952. TAB U - 8, AD-5, 897, May 4, 1953. Quarterly progress report no. 7 Dec. 16, 1952 - Mar. 15, 1953. Final report - Dec. 1, 1950 - June 30, 1953.	x				
University of Oregon - "Investigation of scintillation counters for the detection of soft x-rays," Contr. DA36-039-sc-5599: Quarterly report no. 5, June 1, 1952 - Sept. 30, 1952. (A. E. Casewell, M. Takeo) Quarterly report no. 6, Oct. 1, 1952 - Dec. 31, 1952. (A. E. Casewell) Quarterly report no. 7, Jan. 1, 1953 - Mar. 31, 1953. (J. Nelson, M. Takeo) Quarterly report no. 8, April 1, 1953 - June 30, 1953. (J. Nelson, M. Takeo)	x				
University of Utah - E. Roedder - "Composition and significance of fluid filled inclusions in quartz and other minerals," Contr. DA36-039-sc-48655: First quarterly report Feb. 15 - May 15, 1953.	x				
H. Urkowitz, (Philco Corp.) - "A ferroelectric amplifier," March 1952, Report no. 198 E TAB U - 8, AD-5, 701, May 4, 1953.		x			

	General	Ferroelectrics	Piezoelectrics	Transducers	Ultrasonics
K. S. Van Dyke - (Wesleyan University) - "Piezoelectric crystal studies and measurements," Contr. DA36-039-sc-73: 10th (final) quarterly report, May 1, 1952 - Jan. 31, 1953.	x		x		
"Bibliography of Piezoelectricity - 1952 -," Contr. DA36-039-sc-73: Supplementary vol. # 2, Quarterly report no. 10, April 30, 1953. (K. S. Van Dyke, O. M. H. Wall)	x		x		
"Piezoelectric crystal studies and measurements," Contr. DA-36-039-sc-42587: Quarterly report no. 1, Feb. 1 - April 30, 1953. (E. S. Creeger, K. S. Van Dyke)	x		x		
"Vibrations of crystal plates," Contr. DA36-039-sc-42587: Suppl. vol. # 1, quarterly report no. 10 April 30, 1953. (K. S. Van Dyke)	x		x		
"Piezoelectric crystal studies and measurements," Contr. DA36-039-sc-42587: Quarterly report no. 2, May 1 - July 31, 1953. (K. S. Van Dyke)	x		x		

D. A. Venn, "Current status of quartz crystal units and circuitry for frequency control,"
NRL report no. 4140, April 29, 1953.
TAB - U 20, AD-10,802, July 27, 1953.

C. B. Vogel, "Piezoelectric well hydrophones,"
Jour. Acous. Soc. Amer. 25, 711-16,
July 1953.

A. von Hippel, (Massachusetts Institute of Technology) - "Tables of dielectric materials, Volume IV," Contrs. N5ori-07801, N5ori-07858,
Technical report no. 57, Jan. 1953.
"Theory and application of dielectric materials,"
(summer session course - Sept. 3 - 12, 1952.
"Laboratory for insulation research,"
Progress report no. XIV, Dec. 1953.

P. Voudsen, "The non-polarity of sodium niobate,"
(Acta cryst. 5, 690, Sept. 1952)
Phys. Abstr. 58, No. 550, Jan. 1953.

Y. Wada, S. Shimbo, "Absorption of ultrasonic waves in benzene solutions of methyl metacrylate in different polymerization stages,"
Jour. Acous. Soc. Amer. 25, 549-52, May 1953.

D. L. Waldelich, "Rectifying property of polarized barium titanate,"
Jour. Acous. Soc. Amer. 25, 796, July 1953.

E. Wainer, C. Wentworth, "Niobate and tantalate dielectrics," (Jour. Amer. Ceramic Soc. 35, 207-14, Aug. 1, 1952)
Wireless Engr. 30, No. 137, Jan. 1953.

General	Ferroelectrics	Resonators	Transducers	Ultrasonics
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	General	Ferroelectricity	Resonators	Transducers	Ultrasonics
E. Wainer, C. Wentworth, "Ferroelectricity in osides of fluorite structure," (reference in connection with paper by Cook and Jaffe - Let. to Ed.) (Phys. Rev. <u>26</u> , 1426, Dec. 15, 1952.) J. Amer. Ceramic Soc. <u>35</u> , 207, 1952.		x			
G. J. Waiver, (Rutgers University) - "The growth and investigation of ferroelectric and antiferroelectric crystals," Contr. DA36-039-sc-42480: Quarterly tech. report no. 1 Sept. 1 - Dec. 1, 1952. TAB U - 10, AD-6,551, May 18, 1953.		x			
A. C. Walker, (Bell Telephone Labs., Inc.) - "Quartz synthesis at high pressures and temperatures," Contr. DA36-039-sc-5572: Quarterly progress report no. 6, April 1 - June 30, 1952. Quarterly progress report no. 9. Jan. 1 - Mar. 31, 1953.	y				
A. C. Walker, "Hydrothermal synthesis of quartz crystals," Jour. Amer. Ceramic Soc. <u>36</u> , 250-56, Aug. 1953.		x			
P. D. Wall et al, "The use of high intensity ultrasound in experimental neurology," Jour. Acous. Soc. Amer. <u>25</u> , 281-85, Mar. 1953.					x
A. W. Warner, "Precise high-frequency crystal units," Bell Lab. Rec. <u>XXXI</u> , 205-10, June 1953.			x		

Washington University -
 E. M. Washburn, (Radio Corp. of America) -
 "Research investigations pertaining to low
 frequency contoured at-cut quartz plates,"
 Contr. DA36-039-sc-5460:
 Quarterly progress report no. 7,
 July 15 - Oct. 14, 1952.
 TAB - U 9, AD-6, 242, May 8, 1953.
 Final report
 Jan. 14, 1951 - Jan. 14, 1953.
 TAB U - 15, AD-9, 833, June 29, 1953.
 "Study of aging effects on military plated
 crystal units,"
 Contr. DA36-039-sc-42670:
 Quarterly progress report no. 1.
 Feb. 1 - April 30, 1953.

Washington University -
 "Research related to the formation and growth
 of pegmatite minerals,"
 Contr. DA36-039-sc-5513:
 Quarterly progress report no. 6
 July 15 - Oct. 15, 1952.
 (A. F. Frederickson et al)
 Quarterly progress report no. 7
 Oct. 16, 1952 - Jan. 15, 1953.
 (A. F. Frederickson, J. E. Cox, Jr.)
 Final report,
 Mar. 15, 1951 - Mar. 14, 1953.
 (A. F. Frederickson, J. E. Cox, Jr.)
 First report,
 April 16 - July 15, 1953.
 (A. F. Frederickson, J. E. Cox, Jr.)

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Washken Labs., - (Edward Washken)
 "Study of silica structure minerals,"
 Contr. DA36-039-sc-5587:

Quarterly interim report no. 3.
 Dec. 1, 1951 - Feb. 29, 1952.
 Quarterly interim report no. 4.
 Mar. 1 - May 31, 1952.
 Quarterly interim report no. 5.
 June 1 - Aug. 31, 1952.
 Quarterly interim report no. 6.
 Sept. 1 - Nov. 30, 1952.
 Quarterly interim report no. 7.
 Dec. 1, 1952 - Feb. 28, 1953.
 Quarterly interim report no. 8.
 Mar. 1 - May 31, 1953.
 Quarterly interim report no. 9.
 June 1 - Aug. 31, 1953.

W. Weikowitz, "Crystal acoustic arrays,"
 Jour. Acous. Soc. Amer. 25, 336-7, Mar. 1953.

A. Wender, K. Sann, "The measure of activity
 for oscillating quartz crystals in parallel-
 resonance circuits,"
 Wireless Engr. 30, No. 1273, May 1953.

Wesleyan University - (K. S. Van Dyke) -
 "Piezoelectric crystal studies and measurements,"
 Contr. DA36-039-sc-73:

(Final) quarterly report no. 10.
 May 1, 1952 - Jan. 31, 1953.

"Bibliography of Piezoelectricity - 1952 -,"
 Contr. DA36-039-sc-73:

Supplementary vol. # 2,
 Quarterly report no. 10.
 April 30, 1953.
 (K. S. Van Dyke, O. M. H. Wall)

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	General	Ferroelectrics	Resonators	Transducers	Ultrasonics
Wesleyan University - "Piezoelectric crystal studies and measurements," Contr. DA36-039-sc-42537: Quarterly report no. 1, Feb. 1 - April 30, 1953. (E. S. Creeger, K. S. Van Dyke) Quarterly report no. 2, May 1 - July 31, 1953. (K. S. Van Dyke)	x		x		
"Vibrations of crystal plates," Contr. DA36-039-sc-42537: Suppl. vol. #1, quarterly report no. 10. April 30, 1953. (K. S. Van Dyke)	x		x		
H. H. Wieder, S. Kaufman, "Plastic electrets," J. Appl. Phys. <u>24</u> , 126-61, Feb. 1953.	x				
H. H. Wieder, S. Kaufman, "Plastic electrets and their applications," Elec. Engr. <u>72</u> , 511-14, June 1953.	x				
J. B. Wiesner, (Massachusetts Institute of Technology) - "Electronics, physics, spectroscopy, communications," Contr. DA36-039-sc-100: Quarterly progress report Oct. 15, 1952. TAB U - 3, AD-584, Mar. 28, 1953.			x		
J. J. Wild, J. M. Reid, "The effects of biological tissues on 15-mc pulsed ultrasound," Jous. Acous. Soc. Amer. <u>25</u> , 270-80, Mar. 1953.					x
W. A. Wildhack, "Quarterly progress report, Jan. 1 - Mar. 31, 1952," NBS report no. 1753. T.I.P. U23365, Nov. 25, 1952.	x				

G. W. Willard, "Ultrasonically induced cavitation in water: A step-by-step process," Jour. Acous. Soc. Amer. 25, 669-66, July 1953.

G. W. Willard, "Ultrasonic waves measure the elastic properties of polymers," Bell Lab. Rec. XXXI, 173-79, May 1953.

M. Wittels, "The lattice expansion of quartz due to fast neutron bombardment," Phys. Abstr. 56, No. 2826, Mar. 1953.

J. P. Wittke, (Princeton University) -
"Investigation of the effect of gas collisions upon the doppler breadth of spectral lines," Contr. DA36-039-sc-42539:
Quarterly report no. 4,
Mar. 15 - June 15, 1953.

W. A. Wooster, "Physical properties and atomic arrangements in crystals," Rep. Progr. Phys. 16, 62-32, 1953.

R. I. Yanus, "Problem of the dielectric characteristics of ferroelectrics," (Zh. tekhn. Fiz. 22, 56-61, 1952, in Russian)
Phys. Abstr. 56, No. 6029, Sept. 1953.

General	Ferroelectrics	Resonators	Transducers	Ultrasonics
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C. S. Yeutter, "N1 Carrier: Repeaters and Group units,"
Bell Lab. Rec. XXXI, 347-54, Sept. 1953.

R. Yokota, "Thermoluminescence of quartz and fused quartz colored by X-ray irradiation,"
Phys. Rev. 91, 1013-14, Aug. 15, 1953.

E. Zemyan, R. Pepinsky (Penn State College) -
"Ferroelectric and high dielectric crystals.
Methods for the preparation of deuterio compounds,"
Contr. AF 33(038)12645):
Tech. report no. 7
Dec. 1, 1952.
TAB U - 18, AD-10,372, July 13, 1953.

A. W. Ziegler, "New crystal unit for broadband carrier systems,"
Bell Lab. Rec. XXXI, 497-500, Dec. 1953.

General	Ferroelectrics	Resonators	Transducers	Ultrasonics
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